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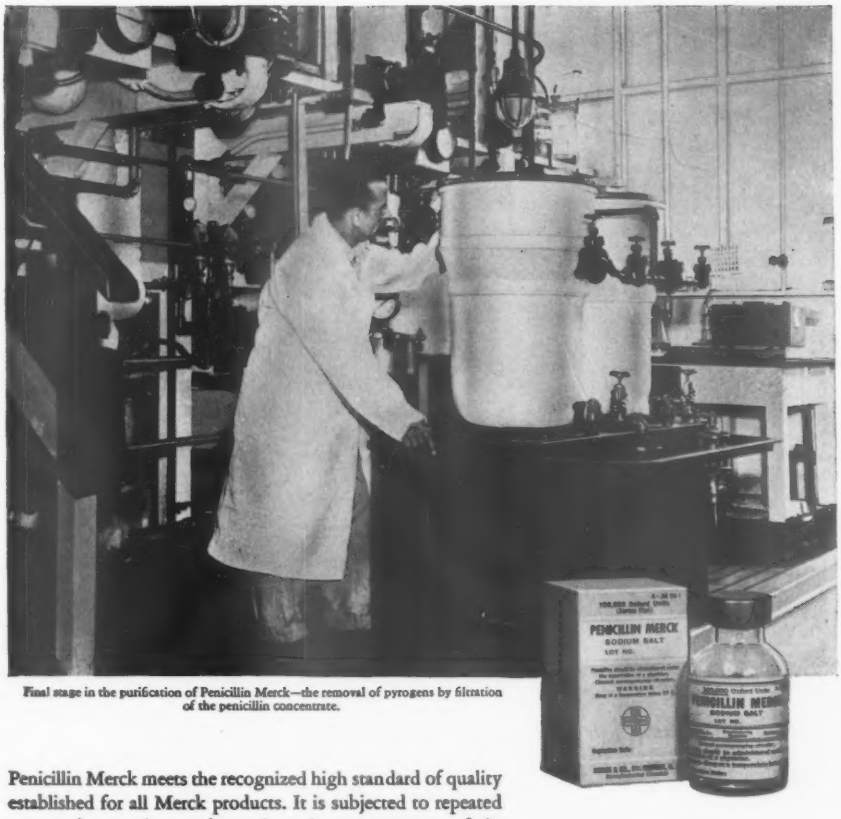

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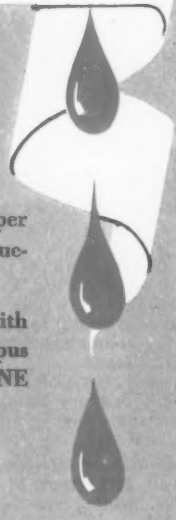

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North Carolina, South Carolina, Georgia, Florida, Puerto Rico.

Northeast Central

Ohio, Indiana, Michigan, Illinois, Wisconsin.

Southeast Central

Kentucky, Tennessee, Alabama, Mississippi, Louisiana.

Northwest Central

Minnesota, Iowa, N. Dakota, S. Dakota, Nebraska.

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EDITORIAL

The Resurgence of The Medical Women's International Association

In a world of conflicting ideologies, the question keeps recurring—how can the nations better understand each other? The Medical Women's International Association is one answer to this question.

Formed in New York City at the close of World War I, this Association held four subsequent meetings in four different world capitols. The last meeting was held in Edinburgh in 1937. The membership then comprised 25 national organizations, ranging from Australia to Yugoslavia.

Aware of the importance of re-establishing the contacts represented by such a group, the President of the International Association, Miss Louisa Martindale, made plans for holding a General Meeting of the the Association in London in September, 1946.

Unfortunately, the continued uncertainties of trans-Atlantic travel made it necessary for the American Medical Women's Association to recommend that the meeting be postponed until 1947. Miss Martindale and the Executive Committee of the International Association graciously accepted this recommendation.

A meeting of the Council of the International Association will be held on September 19th, in London. At this meeting, time, place, and subjects for discussion at the General Meeting in 1947, will be decided upon. The American Medical Women's Association will be ably represented by Dr. Esther Pohl Lovejoy and Dr. Helen Brakeley.

Since many of the European delegates had arranged to attend the proposed General Meeting in September, it is planned to hold two open meetings for them. The delegates will be asked to give their experiences during the war—in the Forces, in resistance movements, in work for refugees. The American delegates are well qualified to speak on these subjects—Dr. Lovejoy on the global relief work of the American Women's Hospitals, Dr. Brakeley on relief work in Italy under U.N.R.R.A.

The American Medical Women's Association salutes the Medical Women's International Association and its able President. Our members regret that we shall not be able to hear at first hand the many tales of heroism, endurance and generosity that will be told in London in September. We look forward to renewing in 1947 the important and interesting contacts of the International Association.

—Catharine Macfarlane, M.D.

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Organization of a Heart Clinic and Follow-Up Treatment of Ambulatory Cardiac Patients

MARY H. EASBY, M.D.

THIS DISCUSSION divides itself naturally into two parts; first, the establishment of a cardiac clinic, and second, the follow-up care of patients who attend such a clinic. The two parts of the discussion unavoidably overlap and involve some repetition, especially in the statement of standards which must be observed in the management of such a clinic. The discussion should also make clear that there are, in general, two types of cardiac clinic: namely, one which is part of the out-patient department of a hospital, and one which is established by a City or State, or in other words, is part of a public health set-up. It is not my purpose to discuss the latter type in any detail, but many of the standards which must be observed for the successful treatment of cardiac patients are so basic that they must be insisted upon in any type of heart clinic.

If the establishment of a heart clinic is contemplated in a hospital it is well to keep in mind the standard requirements which are outlined by the American Heart Association. Even though these requirements can not be fully met in the beginning they should be constantly sought after as the clinic develops and grows. The cardiac clinic in any hospital must be established and operated as a highly specialized unit, separate from the general medical and pediatric dispensary, although it may be a special section of the medical and pediatric service. Only in large hospitals is it necessary as a rule to hold separate clinic sessions for children and adults. However, the clinic may eventually grow to such proportions that the case load is more easily handled in two such sessions. In most instances this separation will be a later development and if it becomes necessary it can then be determined whether the same or separate staffs will handle both sessions. There are undoubted advantages in staffing a children's heart clinic with pediatrists who have had special training in cardiology rather than by internists with such training.

After the appropriate preliminary procedures have been completed, i. e., permission from the hospital authorities to establish the clinic has been obtained, funds for equipping it have been assured, and the selection of a desirable space in the hospital has been made, the necessary requirements for its proper operation should be seriously discussed, adopted, and adhered to by the clinic staff.

One of the most cardinal of these standards deals with the relationship of the cardiac clinic to the ward service. The clinic staff should be part of the hospital staff in the capacity of clinical assistants, assistants, associates, or chiefs of service. Some of the staff should have a ward service; all should have ward privileges; all should be encouraged to exercise their right to follow the course of clinic patients during hospitalization in the ward. It is desirable, although rarely accomplished in these days of bed scarcity, to have a ward service exclusively for cardiac cases or a certain number of ward beds reserved for cardiac emergencies. In this way patients are available for diagnostic study and care is available for those individuals with heart disease who cannot be ad-

equately looked after at home. It is obvious that the subsequent out-patient management of such patients is tremendously facilitated if at least some of the clinic staff are familiar with the course of previous hospitalizations. All patients who have been hospitalized should be directed to return to clinic for follow-up care after discharge from the ward, unless, of course, private care is available.

The choice of clinic personnel is obviously a matter of greatest importance. The Chief of Clinic should have the status of at least an assistant physician. He should be an internist or a pediatrist with special training in heart diseases and with previous training for at least one year in a recognized heart clinic. His responsibilities include the general management of the clinic and the determination of its policies. He should also be responsible for the admission and discharge of all patients. This means that he sees all new patients and after adequate study determines whether or not they should be admitted to the clinic for care. He establishes the admitting diagnosis and then assigns the patients to the various members of his staff. If there are staff members with special interest in some subdivision of cardiology such as congenital or luetic cases, an effort should be made to assign cases accordingly. This special interest can be predetermined by discussion with the staff personnel, either individually or in staff conferences. It is the duty of the chief of the clinic to make the clinic sessions as interesting and fruitful as possible for his staff and for internes and residents. This can best be accomplished by regular clinical conferences on clinic, ward, or outside material. He should also be available for consultation with members of his staff on problems arising during the clinic hours and should encourage research and investigation by his staff on any clinical material available.

The next requirement for the proper operation of a cardiac clinic which will be considered is the availability of consultation facilities. There should be access to consultation services in all specialized clinics in the hospital. On the other hand, the cardiac clinic will offer consultative facilities to the other special departments. In addition, the clinic should have access to an adequate clinical laboratory, to an x-ray department, to an electrocardiographic department, and last, but by no means least, to a well stocked pharmacy. A harmonious relationship with all these will facilitate smooth operation of the clinic, particularly one which has been recently established.

Nursing service during the entire clinic session should be available. How adequate it will be will vary according to the individual institution and will depend somewhat upon the personnel which is available. During the recent war years most clinics maintained fairly adequate service for patients with a much smaller nursing corps than was believed possible. However, the absence of nursing help frequently worked a real hardship for an already over-worked medical staff. Ideally, at least one nurse should be present during the entire clinic session and more than one nurse may be required if the clinic is very large and if the hospital can provide more. Much physician time may be lost if there is delay in getting patients promptly to the doctor and in preparing them for examination.

The duties of the clinic nurse are in general to take the temperature, pulse, respiration, and weight of each patient to be examined and to record these data on the patient's chart before he is seen by the physician. In many hospitals blood-pressure readings are also taken and recorded by either the clinic nurse or a student nurse. There is much to be said, however, in favor of the doctor's making his own blood-pressure observations unless the physician staff is particularly pressed for time. If the nursing service is large enough, a nurse may be in attendance with each physician during his examination of patients. She can facilitate the work of the clinic by bringing each patient and his chart to the examining room, by helping to undress and drape the patient for examination, and also by helping him to dress again after examination and then conducting him with his chart to the medical social worker. On the other hand, there are undoubted disadvantages in a situation in which the patient cannot be alone with the physician during his clinic visits. Most patients will feel freer to discuss their problems with the doctor if no third person is present.

In no other type of clinic can a medical social worker be more valuable than in a cardiac clinic. Patients with heart disease are, in my experience, usually in need of social treatment and are peculiarly amenable to it. The duties of a medical social worker are as follows:* "The primary duty of social service in a hospital or dispensary is to supplement medical treatment of the patient by social treatment, that is, through work in clinic, ward, or home, to aid the physician in dealing with conditions such as the patient's home situation, occupation, or point of view, which re-

*Reprinted from a report by a Committee of the Social Service Section of the Associated Out-Patient Clinics.

quire adjustment in order to make medical treatment effective."

We have gotten far away from those times when a clinic social worker's duties include the functions of a clerk and she is now regarded as a part of the hospital's professional staff whose function it is to deal with certain therapeutic aspects of the patient's illness. A clear definition of the differences in the function of the social worker, and the nursing and physician staffs at the outset will make for a harmonious inter-relationship between these three essential departments, and will contribute much to the effectiveness of clinic operation.

The American Heart Association states in its Standard Requirements for a Cardiac Clinic that the medical social worker must be trained in her profession, or be in the course of training; that she should be directly responsible to the Director of social service in the hospital, and that she should be eligible for the American Association of Hospital Social Workers. Ideally, the case load should not be more than 100 patients for one full time worker. The duties of the social worker consist first of all of her presence during the entire clinic session. She should be available for consultation with clinic physicians on any social problem presented by patients. When adequate social service is at hand, the physicians in any out-patient department soon come to rely upon the help so offered them and to appreciate the therapeutic results of the integration of skilled social treatment with their own medical efforts. Patients presenting social problems to the clinic physician should be referred to the social worker for special interviews.

The social worker usually has an initial interview with each new patient admitted to clinic and, when it seems advisable, pays a home visit to those individuals enrolled in the clinic as active patients. Fee fixing is definitely not included in her duties; this is done by a credit clerk or whoever serves in this capacity in the out-patient department of the hospital. The reason for this is that the medical social worker can establish a more helpful relationship with the patient if her association with him is not initiated by an investigation of his financial status, or by the demand for a fee. She should establish and maintain some form of follow-up system which will enable her to supervise return appointments and to assist the physician in keeping a fairly even case-load from week to week. If this is not done some clinic sessions will be over-burdened while others have a very small attendance. The extent to which the worker will attempt to bring in patients who are delinquent in their clinic attendance will depend somewhat on the policy of the individual clinic and should be determined by joint conference between the Medical and Social Service Departments. In general, when the delinquent patient is a child it is desirable for the worker to interpret to the parents the importance of faithful clinic attendance. This is particularly true in light of the widespread rheumatic fever programs which are now being instituted.

The securing of hospitalization or convalescent care for patients at the request of the physician is another function of the medical social worker. She should also be responsible for communications with other social agencies, schools, and public health nurses, and with other hospitals, and for a transcript of a patient's medical record if he is transferred to another hospital.

By far the most valuable service the social worker will render is her interpretation to the patient of the doctor's advice in so far as it pertains to social and environmental situations. To do this successfully she must have a close and co-operative relationship with the doctors through joint conferences. This will require a willingness on the part of the clinic physician to give adequate time and attention to these aspects of the patient's care.

The social worker must be provided with adequate space to assure her of private interviews with patients. Social records should be made on all her cases and this should be done as early as possible in the patient's contact with the clinic.

A clinic clerk is a desirable addition to the personnel of the cardiac clinic. Her duties consist of handling charts, giving out return appointments, directing patients to the laboratory, x-ray and electrocardiographic departments, etc. This position can be, and often is, filled by a volunteer. During the war years when personnel was so generally diminished, volunteers rendered inestimable service in such a capacity and saved a tremendous amount of valuable time for the medical, nursing, and social service departments in many hospitals.

The cardiac clinic, like all specialized clinics, should work entirely on an appointment system. The patients should be referred from either the cardiac, general medical, or pediatric ward, or from some other ward service of the hospital; from a general medical or pediatric clinic; or from some other hospital clinic seeking consultative service and follow-up care if such is found necessary. In my experience the clinics, aside from the general medical and pediatric, which use a heart clinic most for advisory purposes are the

prenatal and the syphilis clinics. As is well known, many women develop heart murmurs during pregnancy and are referred for evaluation as to cardiac status and advice as to management of pregnancy and delivery from the standpoint of cardiovascular capacity. From the syphilis clinic, patients are sent for determination as to whether cardiovascular lues is present and if so for advice as to antiluetic therapy. Consultations on patients from surgical clinics are sometimes asked for also. In these cases the request is usually for evaluation of the patient's ability to stand surgical procedure and for advice concerning the choice of anesthesia. A cardiac clinic will also receive referrals from neighborhood physicians and school doctors. These patients are usually sent in for study and diagnosis only and should be sent back to the referring physician if he desires to continue with their care. On the other hand, patients sent from other clinics should be enrolled as patients in the cardiac clinic if found to have organic cardiovascular disease, although the spacing of their return visits may be frequently lengthened if they are continuing to receive care in a general medical or pediatric clinic at the same time.

From all these sources, then, is the case load of the clinic drawn. Clinic procedure in regard to this case load should be predetermined by the various individuals who constitute its personnel. In general, patients on their first visit should be seen by the chief of the clinic or by some one of his associates whom he designates for this purpose. Diagnosis is then made according to the diagnostic criteria and in the accepted nomenclature of the American Heart Association. At the time of this first clinic visit special tests are ordered and, except in rare instances, these are to be completed before the patient is seen again. These consist of an electrocardiogram, a Wassermann test, a complete blood count, and a urine analysis. Special examinations, such as sedimentation rates, should be ordered in those cases where they seem indicated. If these laboratory tests have been recently done at the request of some other clinic or in the ward, and if the reports are available they need not be repeated unless some new situation has arisen which makes their repetition desirable. X-ray or fluoroscopic examination is also important. In the long run time and money will be saved if the clinic is equipped with its own fluoroscope or has ready access to one in the x-ray department. This enables the clinician to make his own examination, which he should do at the patient's first or second visit, and also enables him to make follow-up observations during the progress of the patient's disease.

By the time of the patient's second visit all the data from these special tests should be available. Again he should be seen by the clinic chief and re-evaluated in the light of this additional information. The admitting diagnosis is then either confirmed or revised accordingly and the final decision made as to whether or not he has organic cardiovascular disease. If the patient has been sent in for opinion only a transcript of his laboratory and special tests, his clinical examination, and his diagnosis is to be sent by the medical social worker to the referring physician, and such a patient is not enrolled as a member of the heart clinic. On the other hand, if he has been referred for care he is now admitted to the heart clinic, treatment is instituted, and he is given a return appointment.

In some cases more investigative procedure than has been outlined is necessary to determine whether or not a patient actually has organic disease, and it is sometimes difficult or even impossible to determine this without prolonged observation. Much of the work of the clinic chief consists in sorting out those who actually have organic change from the vast number of those who think they have heart disease, or whom some one else suspects of having it. If the case load of the clinic is to be kept within bounds, and if adequate time is to be available for the examination and care of the real cardiacs, the case load must be carefully and accurately selected. It is easy enough to get a clinic cluttered up with patients who have symptoms suggestive of a cardiac condition and in whom such symptoms arise from some other source than the circulatory system. Such patients can be adequately cared for in the general medical clinic, at least until such time that some actual structural heart damage can be demonstrated. However, I feel that children who have suffered rheumatic infection, even though no organic rheumatic heart disease is manifest, should be regarded as potential cardiacs and asked to return for check-up examination at regular intervals.

In the event that both children and adult clinics exist in the same hospital, the age which determines the line of demarcation between them must have been previously determined and strictly adhered to. At some hospitals this is set at 16 years or it may be set at the age which divides the pediatric from the medical ward services. Patients in pediatric clinic, on reaching this age, will "graduate" into the adult clinic. On admission

to the adult clinic they should be re-evaluated as to cardiac status.

Attendance of patients in a heart clinic should be regular. As has been stated, it should be by appointment only except in cases of real emergency, and this should be rigidly adhered to. Each physician working in the clinic should have on his desk a list of his expected case load for each clinic session for the next several weeks in order to prevent him from crowding any one session when he makes reappointments. If patients fail to keep appointments and do not voluntarily apply for new ones, the social worker should investigate by letter, home visit, or both to determine the reason. In the event that the patient still fails to respond and when there has been no attendance for a period of six months, and when there seems no valid reason for this situation, such a patient may be considered inactive. Inactive cases should be reviewed annually or semi-annually by the chief of clinic with the medical social worker and some decision reached as to whether further effort should be made to bring the patient back to clinic or whether he should be closed out. There are advantages in long time observations on certain patients which make it worth while to exert special effort to keep them under observation. Certain types of research project depend on such long time follow-up and much valuable information may be missed if these cases are lost sight of.

In large cities it is desirable that the various clinics serve mainly the district in which they are located, in order to eliminate the long trips back and forth to the hospital which are often a real hardship to cardiac patients. In the event that a patient moves to some distant portion of the city he should be encouraged to make contact with a clinic in his neighborhood, and a transcript of his previous medical treatment should be forwarded to this clinic.

The case records used in a heart clinic may be those designed by the local heart association, if such exists, or those devised by the individual clinic. Probably the most comprehensive charts which are in general use are those provided by the American Heart Association. These are actually research charts and over a period of years provide a wealth of statistical data. However, they are often considered too time consuming to be practical for a busy clinic. An ordinary narrative type of history, with physical examination and follow-up notes, on which a diagnosis is recorded and restated at intervals according to the criteria of the American Heart Association, is entirely satisfactory. The procedure in making the diagnosis is simplified by the use of a rubber stamp which imprints the headings of a four-point diagnosis at the top of the cardiac sheet. These diagnostic headings are as follows:

I. Etiologic diagnosis.
II. Anatomical diagnosis.
III. Physiological diagnosis.
IV. Functional and Therapeutic diagnosis.

An elucidation of these diagnostic steps is found in a book entitled "Nomenclature and Criteria for Diagnosis of Diseases of the Heart" published by the American Heart Association. This book should be present in the clinic at all times and in such a place as to be available to all clinic personnel.

The equipment and space for the cardiac clinic is of considerable importance and should be selected with care when the clinic is established. First, there should be adequate waiting-room space. This should be well lighted, adequately heated, well ventilated, and cheerful, and should have sufficient seating capacity. Cardiac patients should not be expected to stand while waiting to be seen by the physician. If the clinic is above the ground floor, elevator service must be available. An off-set or alcove from the waiting room may be used for weighing and taking temperatures. The weights, temperatures, and blood pressure readings, when taken by a nurse, are recorded on the chart before the patient goes to the examining room. Ideally there should be an examining room for each doctor. If this is impossible, curtained cubicles may be used. In any event, there must be separate examining space for men and woman patients. Each room or cubicle should contain a desk and examining table, a bed and two or three chairs. On the desk in addition to writing materials should be laboratory requests, prescription blanks, tongue blades, a flash light, and a sphygmomanometer.

A fluoroscopic unit is desirable in the clinic, or there should be access to one in the x-ray department. There should also be access to an electrocardiograph so that tracings may be taken during clinic hours if the need rises. In some hospitals a clinic for peripheral vascular diseases is run as an adjunct to the heart clinic if some member of the clinic staff is particularly interested in this specialty. If this is the case, much other special equipment may be required.

Another function of a cardiac clinic pertains to its relationship to central organizations, especially in regard to reporting to such organizations. If a local heart association exists it will

probably ask for a monthly statistical report from each acceptable clinic. The local associations in some large cities have cardiac clinics committees whose membership is composed of the chiefs of the various accepted clinics located in hospitals throughout the city. It is one of the duties of this committee to review each clinic from the point of view of its conformity to standards. The procedure in Philadelphia, for example is as follows:

The executive secretary of the Philadelphia Heart Association or her associate makes an annual inspection of all cardiac clinics and from her observations and from the monthly reports she has received, she submits her report to an Annual Meeting of the Cardiac Clinics Committee. The same procedure is carried out in the case of new clinics which are applying for acceptance for the first time. If the clinic is found to conform to minimum standards of medical, nursing, and social service care, and of physical equipment, and in its relationship toward care, it is accepted as a member clinic. If not, the clinic is rejected from membership. In the event of acceptance, the name of the clinic is submitted to the American Heart Association and subsequently a certificate of membership in the national organization is awarded to the clinic. This certificate is renewed annually for as long as the national standards are complied with. The Philadelphia Heart Association publishes a list of its accredited clinics with their locations, clinic hours, personnel, etc. This list is avaliable to anyone seeking information as to where he can go for reliable and safe care. It also helps individual clinics to serve patients in their own districts, which is desirable for reasons previously stated.

These facts give in general some of the important criteria for the establishment and operation of a properly conducted cardiac clinic. They are based mainly on the experience gained in clinics in a large urban community. In smaller localities the details of organization and management will have to be modified by and adapted to the facilities at hand. However, there are certain cardinal principles for any well conducted clinic which I would like to emphasize, even at the risk of being repetitious:

I. The chief of the clinic must have had some graduate training in cardiology and some previous cardiac clinic experience.

II. Adequate social service must be available. In a small hospital only part of the time of the medical social worker may be at the disposal of the cardiac clinic. This is satisfactory unless or until the case load grows too big for her to continue on such a basis. The medical social worker should not fix clinic fees. She must have adequate space for interviews with patients.

III. A clinic clerk who can give out return appointments, direct patients to the laboratory, etc., will save much time for both the physician and the social worker.

IV. Nursing service during the entire clinic session is important.

V. The case load at any one clinic session must be kept within the limits of what the clinic personnel can handle comfortably. Six to eight patients per each physician is probably the maximum. The number should be smaller for those doctors who are seeing new patients. This necessitates a carefully adhered to appointment system.

VI. Accurate recording of findings, treatment, and recommendations at each clinic session is essential. Whatever form of charting is used the employment of the nationally accepted criteria of diagnosis and nomenclature is necessary.

It is not my purpose to discuss the organization of a State or City clinic. Naturally the Department of Health in the district where such clinics are to be established will determine the policies of these clinics. But the standards set forth in this discussion regarding trained personnel, space and facilities, laboratory connections, etc., will obtain for such a clinic just as much as for the establishment of one in a hospital. The relationship of a public health clinic to the local heart association or other voluntary health agencies in the community will of course be somewhat different.

The follow-up treatment of ambulatory cardiac patients in a heart clinic has necessarily been touched upon to some extent in the foregoing discussion, but there are certain details in the handling of such patients which are important enough to require amplification. The need for an appointment system and the reasons for it have already been emphasized. The frequency of return visits will depend on many factors. The foremost of these is the functional and therapeutic classification in which the patient has been placed. There are few ambulatory patients who need to be seen as often as once a week. The size of the case load and the necessity of avoiding overcrowded clinic sessions may also influence the decision as to how often patients are told to return. The convenience of the patient must also be considered to some extent. If he is regularly employed or for some other reason has difficulty in getting in during clinic hours, and if he belongs in functional class I or II, attendance every few months may suffice. On the other hand, if the

patient is in functional class III or IV, too frequent trips back to clinic may be a real hardship for him; although, of course, these individuals are the ones who need the most careful supervision, especially if they are receiving relatively large doses of digitalis. Patients with any considerable degree of congestive failure may require weekly intravenous injections of a mercurial diuretic, and the benefits derived from these injections may outweigh the exertion of a trip to clinic. Thus we find each case must be evaluated individually as to the optimum interval between visits. A large part of any case load is composed of the chronic types of cardiovascular patients; namely, the leutics, the arteriosclerotics, and the hypertensives, in whom the picture may change only very slowly. These may have their return appointments spaced several months apart. Such patients, however, should be instructed to seek an interval appointment should some acute situation arise. In the case of those with the diagnosis of potential heart disease, for instance, children who have had rheumatic infection without sustaining obvious cardiac damage, one or two visits a year to the clinic should suffice. Here again, however, such individuals should be instructed to return sooner in the event of reactivation of the rheumatic process or some other untoward circumstance. Patients who are unable to keep their appointment should be instructed to get in touch with the medical social worker as soon as possible in order to secure a new date for their return visit.

Special appointments may be required for patients who are to undergo surgery or for women during pregnancy, when an opinion as to cardiac status is sought on a somewhat emergency basis. Parents of rheumatic children should be taught to recognize early signs of rheumatic recurrence and should be encouraged to seek an immediate special appointment if such signs occur. Special appointments may also be given to patients who are to be used for teaching or demonstration purposes.

Patients who present themselves at a clinic session with acute intercurrent illnesses, with congestive heart failure, with evidences of active rheumatic infection or other medical emergencies should be hospitalized, and bed space for them should be at all times available. Those who need convalescent service can be referred to the medical social worker by the clinic physician. In some localities there is a special type of convalescent institution available, such as a hospital for rheumatic children. The hospital clinic should have a close relationship with such an institution.

In closing, I would like to say that there is much to be learned in a cardiac clinic if one attends the sessions with any degree of regularity and over any considerable length of time. In no other type of chronic disease may the patient picture change so abruptly. It is of the greatest importance to have ward beds always available so that cardiac emergencies can be immediately hospitalized for treatment and observation during their acute episodes. Should these acute illnesses prove terminal and autopsy be permitted the cardiac clinic staff should be given the opportunity to be present.

The routine work of a cardiac clinic may at times become somewhat burdensome and possibly boring, but, in my experience, not many clinic sessions go by without turning up something of unusual interest; and one feels rewarded for all the spade work which has been previously expended. It must again be emphasized that careful clinic records including both medical and social service follow-up notes have provided a rich field for research workers. Unless the clinic standards are at all times maintained much that is valuable may be lost to investigators in the field of cardiovascular disease.

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Review of a Series of CONFUSIONAL STATES Seen in Consultation on General Hospital Services

JOAN FLEMING, M.D.

THE PURPOSE OF THIS paper is to review the syndrome of the acute confusional psychosis and to discuss the value of psychiatric understanding and help in its diagnosis and treatment.

This psychosis is important because of the frequency with which it complicates both the diagnosis and the treatment of many disorders seen in general medical and surgical practice. Approximately 10 per cent of all psychoses seen on a state hospital admitting ward belong to this category (1). It seems impossible to estimate the real frequency of these reactions which are never admitted to a hospital or which occur as complications of other disorders in patients on general medical and surgical services. The difficulty in determining the incidence is due to the temporary and secondary nature of the delirium so that it may not be indexed in record files, but there is no doubt that it is of frequent occurrence and that the problems of nursing care, prevention of suicide, and adequate treatment of the primary disorder are made more difficult by its presence.

The conditions in which confusion may appear are numerous, including as they do all states of fever, cardiovascular-renal disease, disorders of metabolism, head injuries, postoperative states, conditions in which hypnotics and opiates have been used, and all persons in the habit of using alcohol. This list covers a wide range of pathology and indicates the importance to every physician of being keenly aware of the possibility of delirium so that he may avoid this complication by noticing and treating the early signs of restlessness and anxiety, especially when they occur in emotionally unstable and conflictual personalities.

The syndrome of the acute confusional state is probably due to some fundamental disorder in the circulatory support of the brain producing a toxemia, anemia, hyperemia, or edema, and a resulting disturbance of the higher integrative functions. This disturbance shows itself in defective perception, association, judgment, and motor control. The syndrome is characterized clinically by a clouding of the sensorium, a prevailing mood of anxiety and fear, and a marked restlessness. All of these fundamental features vary in degree, but in a severe case the patient is disoriented for time, place, and person, suffers from hallucinations and delusions, cannot sleep, and is combative and resistive to therapy. A difficulty in remembering recent events may be the earliest symptom. The patient does not know where he is, who he is, what day it is, whether it is night or day, and cannot recognize other persons accurately. He becomes confused by happenings around him and loses his ability to grasp the meaning of environmental situations. This difficulty extends itself to involve a loss of memory for remote events also.

This clouding of consciousness and loss of the power to comprehend meanings of external stimuli seems to create in the patient a feeling of apprehension and fear. He cannot understand what is

being done to him so that all procedures become threats to his comfort, security, and life. At the same time that he misinterprets environmental stimuli, his own fantasy life grows more active to the point of hallucinations and delusions. The hallucinations are primarily visual, but may be of any sensation. The delusions are vague and unsystematized, but both hallucinations and delusions are usually unpleasant so that coupled with the general mood of apprehension and fear it is easy to see how the patient becomes suspicious and struggles to prevent his being killed or tortured. It is not known whether there is some primary stimulus to motor activity or whether the restlessness and insomnia, practically never absent, are based on the feeling of anxiety engendered by the failure to cope adequately with perceptions and associations. The patient seems to be aware that something is wrong with his mental functions and it makes him restless, sleepless, paranoid, combative, and often suicidal.

This problem of suicide is of particular importance to the general practitioner because of the difficulty in taking adequate precautions outside of a hospital. It should always be remembered that every confused, delirious patient is a potential suicide. His disorientation may make him mistake a window for a door; his fear and paranoid trends may force him to desperate attempts at escape which result in loss of life; or his auditory hallucinations may direct him to kill himself.

The acute confusional state may be caused by a great variety of agents, but the syndrome is not characteristic for any specific agent. Hoch (2) found that excessive amounts of different drugs produce indistinguishable deliria and that the reaction depends less on the specific agent than on the patient's personality integration and experiences. The non-specific character of the mental state occurring as a reaction to an infectious disease is well illustrated by Bromberg (3) who describes behavior disorders, mental deficiency, schizophrenia, depression, mania, hallucinatory states, and acute confusional psychoses as being causally related to chronic encephalitis. Menninger (4), too, finds a wide variety of psychoses associated with influenza which he believes precipitates a psychosis in a predisposed individual, or increases or alters the mental disorder already present. The influence of the previous personality in creating a vulnerable mental organization for the toxic-infectious agent to act upon is shown in a report by Wolff and Curran (5). In a series of twelve cases who showed no fear during a confused reaction, these authors found a history of previously calm, happy, sociable dispositions; whereas in fourteen patients who showed great fear, the previous personality was suspicious, seclusive, and unstable.

In a case reported by Wolff and Curran of repeated delirium in the same patient produced by two different causal factors, the delusional content was the same. At the age of 37 the patient had delirium tremens. He believed that his wife was trying to poison him. The shock of this experience was so great that he gave up alcohol on his recovery. But thirty years later at the age of 67 in another delirious state associated with myocardial failure, his second wife was the object of the same paranoid delusions.

The factors of etiologic importance in confusional states may be grouped into:

1. Intoxications by

(a) Exogenous factors (alcohol, metals, drugs, infection.)

(b) Endogenous factors (nutritional, circulatory, and metabolic disturbances associated with cardiovascular-renal disease, hyperthyroidism, pellagra, dehydration, brain injury, exhaustion, and fatigue.)

2. Degenerative diseases of the nervous system. (These states are usually chronic and progressive.)

3. Psychogenic deliria (rare) characterized by intense excitement and fear of purely psychological origin.

The principles of treatment of the acute cases are in order of importance:

1. *Skilled nursing care.* Twenty-four hour nursing care by nurses who understand the syndrome and can give constant reassurance is a necessity. A good nurse will allay the fear engendered by the hallucinations and the misinterpretations of medical procedures so that the need for mechanical restraint and the tragedy of suicide may be prevented. A good nurse is practically essential in carrying out the other principles of treatment.

2. *Maintenance of adequate nutrition and elimination.* All drugs should be stopped, and excretion should be promoted by a large fluid intake and free catharsis. For bromide poisoning sodium chloride in doses of 4 to 6 gm. daily displaces the bromide from the system. In cases of acute poisoning gastric lavage is indicated. A soft diet

high in carbohydrate and vitamins will aid in restoring nutritional equilibrium. Vitamin therapy is useful in alcoholic states where polyneuritis and scurvy are often complications. Insulin may be given in small doses to cover the carbohydrate, particularly where veneclyses of glucose have been given.

3. *General supportive measures* are indicated in the form of cardiorespiratory stimulants, blood transfusions, treatment of underlying disorders, such as infections, cardiac failure, shock, or metabolic disturbance.

4. *Sedation.* Management of the restlessness and fear may be aided by skillful use of sedative drugs so as to give the patient sleep and prevent exhaustion of reserves so necessary in resisting the underlying primary etiology. Drugs cannot take the place of nursing care and should be used with full recognition of their possible toxic effects. For combative patients who are completely out of touch with reality and will not co-operate with treatment, sodium amytal given intravenously in doses of 0.5 gm. dissolved in 10 cc. of water at the rate of 1 cc. per minute may be used. The patient may first be put in a dry pack with one arm out. Plenty of help to hold the patient during the administration must be at hand. This means six persons, one for each arm and each leg, one for the head, and one to give the injection. It often happens that a struggling patient will become quiet when he sees there is no use to continue the struggle.

It should always be remembered that sodium amytal given intravenously or intramuscularly depresses the blood pressure and the patient's circulatory efficiency must be taken into account in choosing a sedative drug. This fact is also to be considered in the use of chloral hydrate (doses 0.3 to 0.6 gm.), another valuable hypnotic, but one which is said to be toxic to diseased myocardium. Paraldehyde is perhaps the best hypnotic in toxic cases because of its relative harmlessness, quick action, and rapid elimination. Paraldehyde may be given by mouth in doses of 2 to 10 cc. covered by iced fruit juice because of its disagreeable taste. It may also be given advantageously by rectum (15 to 30 cc. in 50 cc. of milk) as a retention enema in cases where oral administration is contraindicated or cannot be accomplished. Rectal manipulation must be done with caution, however, because in paranoid and fearful patients it may be interpreted as an attack. Another drug which may be used rectally is nembutal, the capsules being perforated before being placed in the rectum (dose 0.09 to 0.18 gm). Bromides alone or in combination with luminal are useful for daytime administration in mild cases. Sodium luminal (gm. 0.12) may be given subcutaneously two or three times a day with good effect in hyperactive cases. For extreme restlessness and where other means have failed, hyocine (gm. 0.0003 to 0.0004) may be used, but always the toxicity of the drug itself must be kept in mind. The same is true of morphine which is advocated by many for cardiac cases and is used routinely for pain in postoperative cases.

Another means of sedation is hydrotherapy to be used in place of drugs wherever possible. Sponging with lukewarm water or prolonged baths at temperature of 96° are pleasant and beneficial procedures except where circulatory collapse is imminent. Wet packs are contraindicated because the restraint increases the prevailing fearfulness of the patient.

5. *Relief of cerebral edema* may be accomplished by:

(a) Spinal drainage of 10 to 15 cc. cautiously and slowly withdrawn. This is said to be very effective in delirium tremens.

(b) Intravenous injection of 100 to 300 cc. of 50 per cent sucrose. Sucrose is used rather than glucose for this purpose because it has been shown by Masserman (6) that sucrose is more effective in reducing spinal fluid pressure and in preventing the unfortunate secondary rise.

6. *Psychotherapy.* The techniques of ventilation, reassurance, and re-education are useful in helping the patient adjust to the fear of death associated with being ill and in a hospital. They aid in giving the patient security and encouraging co-operation with other treatment procedures. Underlying psychopathology can be treated in some cases with benefit to the patient in terms of prevention of future deliria.

A study was made on a series of twenty-nine patients admitted to general services in The Albert Merritt Billings Hospital. A psychiatric consultation was requested for these patients because of a state of confusion (13 per cent of the 226 psychiatric consultations asked for during a period of one year). We were interested not only in observation of the confusional state, but also in estimating the value of the psychiatric consultation in aiding in the diagnosis and treatment of the patient.

	No.	General Medicine		Neurology		Surgery	
Consultations	226	Cardio-renal	Others	Med.	Surg.	Gen.	Others
Confusional States	29	7	7	8	2	2	3

Ages	Sex	Time of Onset
Range: 24-73 years.	Men: 15	Before admission: 8
Less than 40 years: 3	Women: 14	After admission: 21
More than 45 years: 26		
Between 50 and 60 years: 13		

TABLE I

Table I shows that the twenty-nine patients were seen in consultation at the request of seventeen different attending men. These staff members were distributed, twelve in medicine and five in surgery. The medical consultations included ten requests from neurology, seven from the cardio-vascular-renal service, two from the gastro-intestinal service, four from general medicine, and one from dermatology. The patients ranged in age from 24 to 73 years. Three of the patients were less than 40 years old, whereas the remaining twenty-six were 45 or older. Thirteen occurred in the age group 50 to 60, a decade notable for its difficult physical and emotional adjustments. Fourteen of the patients were women and fifteen were men. Eight cases evidenced confusion on admission to the hospital and twenty-one cases developed a confusional picture anywhere from a few days to several weeks after admission.

Table II summarizes the etiologic factors. There were eight cases where two factors were causal and three cases where three different agents contributed to the confusion. Thirteen were in the exogenous group, seventeen in the endogenous group, six in the group where degeneration in the central nervous system was primary, and six in the group where psychogenic factors, such as depression, anxiety, and reaction to restraint played a primary role. Of the exogenous agents, alcohol was a factor in four cases, bromide in one, sulfanilamide in one, morphine and atropine in one, and luminal in one. Infection played a role in three cases and alkalosis by ingestion of alkalis in two cases. The endogenous factors in-

TABLE II

Etiological Factors

Total = 42 No. of cases with two factors = 8 No. of cases with three factors = 3

Toxic = 30		Degenerative = 6	Psychogenic = 6
Exogenous = 13	Endogenous = 17	Senile dementia.... 4	Depressive psychosis 2
Drugs — 8		Altzheimer's Disease 2	Anxiety..... 2
Alcohol..... 4	Thyroid..... 1		Restraint..... 2
Bromide..... 1	Cardio-renal..... 4		
Sulfanilimide..... 1	Vascular..... 4		
Morphine } 1	Brain Injury..... 2		
Atropine }	Metabolic..... 6		
Luminal..... 1			
Infections..... 3			
Metabolism..... 2			

Organic Diagnoses = 46

Classification		Multiplicity				Relation to Psychiatric Condition	
		Single	Two	Three	Deferred		
Neurological	14	14	7	5	3	Related	19
Cardiovascular-renal	10					Causally	16
Metabolic	5					Coincidentally	3
Acute infection	3					Unrelated	7
Blood dyscrasia	3					Deferred	3
Gastro-intestinal	2						
Neoplasm	1						
Sinusitis	1						
Rheumatoid Arthritis	1						
Neurodermatitis	1						
Fibromyomata	1						
Syphilis—CNS	1						
Undiagnosed	3						

TABLE III

cluded disorders in various organ systems or disturbances in the metabolic economy. Hyperthyriodism was a factor in one case; cardiovascular-renal pathology in eight cases, brain damage in two cases; hemorrhage, shock, dehydration, alkalosis by vomiting in six cases.

Table III contains a summary of the diagnoses of the organic difficulties from which the patients suffered. There were forty-six different organic diagnoses. Fourteen patients received a single diagnosis; seven patients had two organic disorders; five patients had three; and in three cases the organic diagnosis was deferred at the time of the consultation. In one of these cases, the final diagnosis was bromide psychosis, in one it was cerebral arteriosclerosis, and in the third the primary organic diagnosis remained deferred.

The order of their frequency according to the pathological and systemic classification of the diagnoses is illustrated in Table III. The neurological cases were most frequent and included not only degeneration and arteriosclerosis (eight cases), but concussion (one case), thrombosis (one case), astrocytoma (two cases), an injury to the brachial plexus (one case) and neuritis (one case). The cardiovascular-renal group included chronic glomerulonephritis (one case), coronary occlusion (three cases), hypertension (two cases), myocardial failure (three cases), and generalized arteriosclerosis (one case). The diagnosis in the metabolic field were diabetes mellitus (two cases), thyrotoxicosis (two cases), and Addison's disease (one case). Acute infections were diagnosed in one each of three cases, cellulitis of hand, carbuncles, and lobar pneumonia. Blood dyscrasias were diagnosed in three cases, secondary anemia in two, and agranulocytosis in one. Duodenal ulcer was the diagnosis in two gastro-intestinal cases. Hypernephroma, sinusitis, rheumatoid arthritis, neurodermatitis, fibromyomata, and central nervous system syphilis were factors in one case each.

Of the forty-six different organic diagnoses made by the medical and surgical services, sixteen seemed to be causally related to the state of confusion for which psychiatric aid was desired. The causal relationship was evident in the presence of degeneration of the central nervous system through atrophy, sclerosis, or tumor, and in the cerebral edema as a result of cardiac decompensation, renal failure, or increased intracranial pressure. There were three cases in which the organic condition was related to the confusion, but not in a directly causal way. In one case of pneumonia, there was a history of alcoholism. The confusion appeared the day after the fever went down and it is probable that the pneumonia was only indirectly related to the confusion through the possible etiologic influence of the alcoholism on the pneumonia by decreasing the patient's resistance. In one case the acute cellulitis may have precipitated the confusion through the uncertain mechanism of toxic absorption. The patient had a temperature of 103° (R) with confusion for two days. In another case the hemorrhage from the duodenal ulcer may have caused enough cerebral anemia to produce confusion, but other factors in this case which had to do with the treatment of the hemorrhage such as transfusion, morphine, atropine, and alkalosis, may also have played a part.

Cases in which the organic diagnosis was unrelated to the confusion:	
A. Cases where unknown factors in previous personality were causally related:	
Depressive psychosis	2
Aggressive personality	2
Alcoholism	1
B. Cases where factors in treatment of organic disorder were causally related:	
Restraint and luminal	1
Multiple unexplained procedures	1
Sulfanilamide	1

TABLE IV

The predominance of cases with disease of the circulatory system, 18 in all, is to be expected since confusion with clouding of consciousness is a common symptom when the circulation of the brain is disturbed. Mayer-Gross (8) distinguishes two types, a twilight state of sudden onset, short duration, and complete recovery if the patient survives, and a condition of "episodic emotional fluctuations" which may be transient or persist for months. He finds that the principal change in personality associated with hypertension, arteriosclerosis, and heart failure is a loss of adaptability and an exaggeration of previous positive traits. This seemed to be very true in our cases where the treatment of the underlying disorder, especially by bed rest, was seriously hindered by the patient's inability to adapt himself to a changed routine.

Only four of our cases seemed to be related to operative procedures. Two were craniotomies for brain tumors; one was an incision and drainage for cellulitis; and one was the application of a cast under anesthesia for a brachial plexus injury. In every case there were factors other than the surgical procedures responsible for the development of confusion, but the preoperative psychological state is an important consideration in prognosticating postoperative psychoses. Abeles (10) reports an interesting review of 29 cases of postoperative psychosis at Bellevue in which he urges preoperative psychological preparation of the patient to combat the prevalent fears of death, mutilation, and the special psychological significance obtaining in operations on such organs as the ovaries and the eyes.

Table IV shows an analysis of the eight cases in which the organic diagnosis was unrelated to the psychiatric state. The psychiatric consultation uncovered factors in the personality which were definitely related to the confusion in five of these cases. Two were actually depressive psychoses with a history of a long period of mood change and the development of delusions and suicidal attempts. Anxiety and hypochondriasis with numerous somatic complaints were the early symptoms progressing to conviction of the presence of cancer and syphilis to acount for the vague pains from arthritis and sacro-iliac strain. Paranoid trends became prominent and suicidal attempts were made. Confusion with disorientation and negativism seemed to follow rather than precede the emotional disorders in these cases. Two cases were very unco-operative and seemed to be confused and very irritable for short transient periods during the night especially. Investigation failed to reveal any significant cause except a lifelong aggressive personality which reacted to pain and frustration with irritable and unco-operative behavior. As the pain was relieved and the patients got habituated to the confinement and restrictions of hospital life, the behavior improved and the periods of confusion disappeared. Undiscovered alcoholism was an etiologic factor in a case of delirium tremens complicating an orthopedic condition in a sixty-three year old janitor.

In two cases factors in the treatment of the organic conditions seemed to be the most important agents in the confusional picture. In one case of neurodermatitis in a very aggressive person, the restraint to keep her from scratching and the heavy sedation with lumnial produced a toxic state of confusion relieved as soon as the luminal was discontinued and rate of elimination was increased on the advice of the psychiatrist. In a case of Addison's disease, a sensitive, naturally fearful woman who had an idea her condition was

Confusion Interfered with Organic Treatment		
Cases	No.	Interfering Factor
Yes	21	Confusion primarily.... 9
No	8	Personality difficulty primarily..... 8
		Both..... 4

TABLE V

Condition on Discharge	
Primary Condition	Psychiatric Condition
Cured..... 3	Cured.....10
Improved.....12	Improved..... 9
Unchanged..... 9	Unchanged.....10
Deceased..... 5	

TABLE VI

more serious than the doctors admitted reacted with temporary confusion and paranoid trends to what she thought were unnecessarily numerous examinations and delay of an operative treatment of her uterine fibromyomata. Reassurance and explanation of the reason for the delay relieved her apprehension immediately.

Table V shows the cases in which the confusional state interfered with the treatment of the organic disorder. In nine cases the confusion with its elements of fear, restlessness, insomnia, and lack of co-operation was primary. In eight of the nine cases, the treatment indicated was bed rest for cardiac conditions, duodenal hemorrhage, brain tumor, and acute cellulitis. In the ninth case, the patient was unable to co-operate with diabetic management because of cerebral arteriosclerosis which caused periods of temporary confusion. In eight cases the personality factors were the primary difficulty in management. Here, too, rest was an important factor and the patients did not co-operate principally because of inability to adapt to hospital routine or to endure pain, or because of fundamental depression and anxiety so great as to make them suicidal. In several of these cases, there was a history of maladjustments reaching far back with life-long neurotic behavior. The patient with neurodermatitis had had several "nervous breakdowns", was divorced from one husband and separated from a second. In a case of repeated coronary accidents with myocardial failure, the patient refused to stay in bed. He was a childish, dependent personality, full of resentment against his wife, and suffering from intense anxiety and depression. In four cases, both the confusional state and the personality were serious obstacles in the treatment of the organic disorder. In three of these cases alcoholism was a factor, a condition which exists only in maladjusted and defective personalities. In the other case a duodenal hemorrhage followed almost immediately a marital conflict in which the patient's wife left him suddenly and refused to help in the treatment of his ulcer and in his financial recovery after the depression. The ulcer itself made its first appearance at the time of financial reverses in 1933. The patient was a very moral and conscientious man, unable to adjust easily to frustration. In his confusional delirium he suffered from visual, auditory, and olfactory hallucinations, believed a lie detector was in his room to spy on his relation with the nurses, and believed he was being killed with poison gas because he knew too much.

Table VI is a summary of the condition of the patients on discharge. Three were cured of the primary condition for which they entered the hospital—an acute cellulitis, a lobar pneumonia, and a bromide psychosis. Twelve cases showed improvement of their organic disorders. In nine the organic condition was unchanged. Most of these were chronic cases of cerebral arteriosclerosis or degeneration. Five patients died. All of the latter were cardiac cases, although one was complicated by duodenal ulcer and hemorrhage. Of the total of twenty-nine cases of confusion, ten patients were completely cured of this temporary state of delirium. Nine were improved in that the confusion was less marked or had disappeared leaving only the difficult personalities or the problem of alcoholism to deal with. In ten the psychiatric condition was unchanged. This group included one depressive psychosis, one chronic alcoholic, and the cases of cerebral arteriosclerosis and degeneration which showed signs of senile dementia.

These observations bring up the question of prognosis in confusional states. Henderson and Gillespie (7) state that 70 per cent of the acute confusional psychoses make a complete recovery. This is undoubtedly true of the acute disorders which are complications of such primary difficulties as alcoholism, acute infections, postoperative circulatory and metabolic disturbances, and often

Psychiatric Consultation Useful to Referring Service		
Diagnosis primarily	8	
Treatment primarily	2	22
Both diagnosis and treatment	12	
No significant aid	7	

TABLE VII

cases of cardiac decompensation which recover. Our own figures show only 34 per cent complete recovery on discharge from the hospital. Damage to brain tissue causes mental symptoms which are often irreversible as is indicated in the group with cerebral vascular disease and senile dementia where 34 per cent of our cases were unchanged. Mayer-Gross (8) feels that separability of function differentiates the hypertensive cases from the arteriosclerotics who show progressive deterioration of personality with focal symptoms. The other 32 per cent in this study showed marked improvement on discharge with probably ultimate recovery from the confusion although our records are incomplete on this point.

Table VII is an attempt to evaluate the usefulness of the psychiatric consultation to the referring service. In eight cases the psychiatrist was helpful primarily in establishing the diagnosis. These cases varied from the simple delirium complicating acute cellulitis, cardiac decompensation, and postoperative brain tumor to the confirmation of the diagnosis of senile psychosis. In two cases the consultation was primarily beneficial in recommending treatment of the confusional state. This treatment involved procedures such as lumbar puncture and intravenous injection of 50 per cent sucrose to relieve cerebral edema in one case not yet diagnosed completely and the use of psychotherapy in one case of coronary occlusion with severe personality problems. Both of these cases showed improvement of their confusion under psychotherapy. In twelve cases, both diagnosis and treatment were aided in the psychiatric consultation by the recognition of the toxic delirious reaction and the recommendation for effective sedation, decompressive procedures, and proper nursing care. The latter included suicidal precautions which were a serious threat in four cases, in two of which actual attempts were made. Suicidal precautions were recommended in all cases of acute delirium. In seven cases no significant aid can be attributed to the psychiatric consultation. These were the cases of cerebral degeneration and senile dementia, one case of brain tumor, and one case of subarachnoid hemorrhage where lumbar puncture was already being done.

Emphasis should be placed on the importance of diagnosing an underlying psychosis such as a depression or a schizophrenia before a toxic delirious state supervenes as a result of poor nutrition, dehydration, secondary infection, acute alcoholism, or drug intoxications. Alcoholism often covers a depression or schizophrenic process and drugs taken to produce sleep or with suicidal intentions may bring about a delirium which confuses the recognition of the primary personality disorder. Jamieson and Wall (9) maintain that the delirium may be differentiated from the underlying psychosis on the basis of a good history of psychiatric difficulties existing before the patient became confused and disoriented. Physicians in general practice are only too often uninterested or careless in eliciting evidence for depression or schizophrenia as a foundation for hypochondriacal complaints frequently of a delusional degree.

Inferences of a general nature to be drawn from the figures given may be stated as follows:

1. Thirteen per cent of cases on general medical and surgical services in this study showed confusion as a complication serious enough to warrant psychiatric consultation.

2. In this group, twenty-one, or about seventy-five per cent, revealed that the confusional state interfered with the treatment of the primary organic condition. In fifty-seven per cent discoverable personality factors played a part in the therapeutic difficulties. Fearfulness, emotional instability, and inability to adjust to new and unpleasant circumstances were the principal factors.

3. Of this number, twenty-two, or seventy-six per cent, were significantly benefitted by the psychiatric consultation. The psychiatrist was helpful in eliciting history of personality factors of etiologic and therapeutic significance, in evaluating signs and symptoms as toxic-confusional reactions to differentiate them from depression, schizophrphrenia, dementia, and neurosis, and in recommending and in some cases carrying out the procedures indicated for treatment of the confusional state. These latter involved principally suicidal precautions, effective sedation, decompressive procedures, and psychotherapy.

4. These findings and the knowledge that fear and restlessness are early signs of the confusional

reaction suggest the possibility of early diagnosis by physicians who are aware of the personality of their patients and the psychopathology of confusion. An understanding of the nature of the reaction is of the utmost importance in immediately instigating prophylactic and therapeutic measures for the security and reassurance of the patient. These measures are best offered by special nursing care with particular attention to elimination, diet, and sedation. Psychotherapy is profitable in many cases and should often be continued after recovery in the attempt to treat the unstable personality so predisposed to the acute confusional reaction.

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Tropical Medicine

Part V—The Typhus Fevers or Rickettsial Diseases

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Introduction

THE RICKETTSIAL DISEASES are specific, self-limited infections characterized by high, continued, remittent fever and rash. They are arthropod transmitted. Pathology is found chiefly in the blood vessels.

Rickettsias, causative agents of these diseases, are small microorganisms about one-third the size of bacteria. In size they lie between the viruses and the bacteria. Most of them are not filtrable. The pathogenic rickettsias multiply only within living cells and cannot be cultured on artificial media. They can be grown in tissue culture and on the yolk sac of the developing chick embryo. They stain poorly and tend to be pleomorphic. All pathogenic rickettsias look alike, intracellular minute diplobacillae or coccoid forms sometimes appearing in the cytoplasm in short chains. The various rickettsias are differentiated by pathology, serological reaction and by their arthropod vectors.

These diseases can be divided into three large groups:

1. The Typhus group. This includes epidemic or louse-borne typhus and endemic, murine or rat flea borne typhus and Brill's disease. All forms of louse-borne typhus agglutinate strain O X 19 of Bacterium Proteus vulgaris.

2. Tsutsugamushi fever also known as Japanese river fever and scrub typhus and other closely related mite-borne infections comprise this group. All forms of the mite-borne disease agglutinate strain O X K of Bacterium Proteus vulgaris.

*3. The spotted fever group, which is transmitted by the dog and woodticks, includes Rocky Mountain spotted fever, Sao Paulo disease of Brazil, fievre boutonneuse of the Mediterranean countries and Africa. All forms of the tick-borne disease agglutinate strain O X 2 of Bacterium Proteus vulgaris.

All rickettsial diseases have certain factors in common. They are all transmitted to man by arthropod vectors. These rickettsias grow only within living cells and cannot be cultured on artificial media. The clinical pictures of these diseases share the following features, sudden onset with headache, fever and rash and have a duration of from two to three weeks. In vertebrates the rickettsias are found chiefly in the endothelial lining of the blood vessels and reticulo-endothelial system. The most pronounced symptoms and findings arise from pathology in the brain and skin. Patients' sera contain agglutinins for one or more strains of Proteus vulgaris. Usually an attack confers an immunity which is more or less complete. Geographically these diseases are distributed widely over the world. Strictly speaking, they are not tropical diseases but are closely associated with war, famine and filth wherever such conditions exist. Considered as a whole, the rickettsial diseases are second only to malaria in economic importance and threat to life.

The Typhus Group

EPIDEMIC TYPHUS FEVER

Classical or Old World Typhus fever is the most important disease of this group. In time past it was known as jail fever, gaol fever, war fever, famine fever, hospital fever, ship fever, and the black death. Great epidemics of typhus fever are recorded throughout history, following in the wake of war, famine, filth, and vermin. Hundreds, thousands, and even millions have died in a single epidemic. In the Serbian epidemic 1917 to 1921 two million lost their lives and 36 per cent of the physicians died of typhus.

Typhus fever has played an important role in history and in fixing geographical boundaries.

*This third group is not within the scope of this paper.

Typhus has been Russia's greatest ally; in fact Russia has never been conquered because of her lice. Charles XII of Sweden was defeated by typhus when he invaded Russia. During the Thirty Years War the population of Germany was reduced from 45 millions to 18 millions by plague and typhus. Napoleon's vast army of 400,000 invaded Russia; only 5,000 returned, and they carried typhus to many countries, including the United States.

Deaths from typhus in World War I are estimated at three million. In the recent conflict between Russia and Finland there was no typhus in the Finnish army. Their habit of taking steam baths and rolling in the snow prevented it. No self-respecting louse could tolerate these changes in temperature.

Typhus fever has taken its toll of research workers who have tried to conquer it. Dr. Ricketts, in whose honor the diseases were named, died of typhus in Mexico in 1910, and the distinguished research worker, Dr. von Prowazek, succumbed in 1915 during experimental investigation of the disease.

The cause of epidemic typhus fever is Rickettsia prowazeki. It is carried from man to man by the body louse, Pediculus humanus. This louse is host specific and feeds only on humans. The louse lives by choice along the seams of undergarments. With its feet firmly attached to the garment, it extends the head over to the skin surface and takes a blood meal several times a day. It is found rarely on the skin. Under normal temperature conditions, the louse does not leave the body, but in the presence of fever or after death, it quits the body like a rat deserts a sinking ship. These migrating lice spread the disease, for dislodged lice seek other hosts immediately.

If the host is infected the louse ingests the rickettsias with the blood meal. Rickettsia prowazeki does not reach the salivary glands of the louse but is found in large numbers in the intestine and in the dejecta. As the louse bites it deficates. Probably infection occurs through the puncture wound when it is contaminated by the crushed louse or soiled by its excreta. The female louse lays 4 or 5 eggs daily for 4 or 5 weeks. Eggs hatch in approximately 10 days and reach maturity in another 14. The cycle, from egg to egg, is completed in about 25 days. The rickettsias are not passed from the infected female louse to the egg but the young louse may become contaminated by contact with infected feces. The dried dejecta remain infective for long periods of time. They may be carried to new hosts by dust or droplet contamination through the mucous membranes of the mouth or nose or even through the conjunctiva. It has been shown that the rickettsias can pass through the intact mucous membranes.

A single infected louse may carry sufficient rickettsia to cause typhus fever. The infective organisms invade the endothelial lining of the blood vessels and multiply within the cytoplasm of the cell. This causes the cell to swell. It finally ruptures and sets the rickettsia free to invade other cells and spread through the circulation. The rupture of the endothelial cells leaves a roughened area in the lining of the blood vessel. In this region platelets and white cells collect, fibrin is deposited, red cells enmeshed and a mural thrombus formed. The entire vessel may be occluded. Surrounding the vessel there is tissue reaction, monocytes and polymorphonuclear cells collect. This is called Kraenkel's node or typhus node. The thrombus causes an infarct with hemorrhage, ischemia and necrosis. As this process takes place in all parts of the body any organ or tissue may be involved. In about a week or ten days the rickettsias have reached a concentration sufficient to cause host reaction.

The onset of typhus fever is abrupt, usually with chills accompanied by severe headache, backache and pains in the arms and legs. Nausea, vomiting and epistaxis are common. The chill is followed by an elevation of temperature to 103 or 105° F. The temperature curve shows a high, remittent, continuous fever for about 14 days. Mental symptoms are prominent, in fact the word typhus means coma. About the fifth day the patient becomes stuporous and may have convulsions or delirium. Bronchitis with cough and moderate leukocytosis are found. At approximately the same time, fifth day, a rash appears. Usually the rash begins on the chest, spreads over the back and abdomen sparing the face, hands and feet. At first it is macular and fades on pressure, later it becomes petechial and no longer fades. At pressure points, elbows, sacrum, heels, etc., there may be subcutaneous hemorrhages or even deep gangrene. These dark sloughing areas of necrosis gave the name of "black death" to this disease. As the rash subsides it leaves a brownish pigmentation which gradually fades.

Occluding thrombi in the vessels of the brain account for the headache, stiff neck, stupor, coma, convulsions and delirium. The same process in the

Strains of Proteus vulgaris	Epidemic Typhus Endemic Typhus and Brill's Disease	Scrub Typhus or Tsutsugamushi	Rocky Mountain Spotted Fever
O X 19	+ + +	— to +	+
O X 2	+	—	+
O X K	—	+ + to + + +	+

WEIL-FELIX REACTION

heart muscle causes a myocarditis with low blood pressure and bradycardia. In the skin it produces petechial hemorrhages and gangrene. The same picture occurs in the lung with petechial hemorrhages, bronchitis and perhaps secondary infection and pneumonia. The spleen, kidney or other organs may be involved.

In favorable cases the temperature drops in 10 to 14 days, symptoms disappear and recovery ensues.

The mortality rate varies with many factors. It is low in children and very high after the age of fifty years. In some epidemics the disease is mild, in others severe. The death rate is rarely under 10 per cent, while in areas of famine or in exhausted refugees it may reach 90 per cent or more.

The diagnosis depends upon the history, clinical picture, presence of Kraenkel's nodules in the skin, negative blood culture, normal spinal fluid findings and upon the production of the disease in guinea pigs after the injection of blood or tissues from the patient. A positive Weil-Felix reaction confirms the diagnosis.

The Weil-Felix reaction depends upon a nonspecific agglutination of certain strains of Bacterium Proteus vulgaris by the sera of the patient suffering from various types of rickettsial infections. Titers of 1:100 are considered positive but more significant is an increasing titer from the fifth to the fifteenth day. After recovery the titer gradually declines.

Treatment

Prevention is the most satisfactory treatment for this entire group of diseases. Delouse, deflea, demite, detick, derat, avoid overcrowding, and keep the population clean and well fed are the most important general measures of prevention. Also the susceptible can be rendered immune by the use of vaccine. Major Ecke recommends the use of Cox type vaccine and he believes it is of value even during the incubation period of the disease. During epidemics, hospital and ambulance personnel require special protection. They should wear white, one-piece garments which fasten tightly about wrists and ankles and include a hood which has tight elastic about the face. Special gloves, boots and masks which cover mouth, nose, and eyes are advisable. All of the clothing should be rendered louse-proof by impregnation with a 2 per cent emulsion of D.D.T. Delousing stations for patients and population in general should be well organized and provide for isolation, sterilization of clothing, abundance of soap and water and the use of D.D.T. in spray or powder form. Insect repellents are also helpful. Laundresses and others who care for soiled bed linen and contaminated clothing should wear gas masks to protect them from the dust of dried contaminated louse feces.

After an individual develops symptoms there is no specific treatment for typhus fever. Immune serum has been used with some beneficial results but it has not been established as a therapeutic measure. The traditional ice cap to the head, hot baths to stimulate the circulation and prevent bed sores, liquid nourishing diet, mouth wash and maintaining the fluid balance are helpful. Purgatives should be avoided because of the tendency to hemorrhage. On the whole, treatment is unsatisfactory.

In the American Army during World War II, there were no deaths caused by epidemic typhus fever. Prophylactic vaccination and the use of D.D.T. were the most important factors in its prevention. Brigadier General Bayne-Jones states: "A typhus epidemic need never occur anywhere

if people will use the means which now exist to prevent it."

Endemic Typhus

Endemic typhus is also called murine typhus or flea-borne typhus. The names of various geographical locations where the disease exists have also been attached to this condition such as: Toulon typhus, Malayan typhus, also Manchurian, Greek, Chinese, and African typhus.

Endemic typhus is less severe than the epidemic form. It is caused by a rickettsia which is closely related to or identical with Rickettsia prowazeki. This disease is transmitted by the rat flea Xenopsylla cheopis. Geographically it is widespread but occurs more often in the tropics and subtropics. It is not uncommon in southern United States. Rats are the chief reservoir of the disease and it is carried from rat to rat by the rat louse. This louse is species specific and does not feed on humans. The rat flea may also carry the disease from rat to rat. As the rat flea is not species specific it may feed on man. If the flea is infective the human host may develop endemic typhus fever. If perchance this patient is infected with lice they may become infected and spread the disease from man to man, thus starting an epidemic of typhus fever. The rat mite may serve in the same capacity as the flea.

Endemic typhus may also be contracted by contact with infected flea feces or by the ingestion of food contaminated with infected rat urine. The symptoms are similar to but less severe than epidemic typhus. Petechial hemorrhages and cutaneous gangrene do not occur.

The mortality is less than 5 per cent. It is severe only in persons over fifty years of age.

Treatment is the same as for the epidemic form. Lieutenant Colonel Smith recommends the use of para-amino-benzoic acid. As the disease is sporadic, vaccination is not feasible.

Rat proofing is the most important step in control.

Brill's Disease

Now it is generally accepted that Brill's disease is a recurrence of epidemic typhus. It occurs chiefly in Russian immigrants. The virulence is low and mortality zero.

Tsutsugamushi

This condition is known also as Japanese river fever, scrub typhus and mite typhus.

Scrub typhus is an acute febrile disease caused by Rickettsia orientalis and transmitted by the larval form (chigger) of Trombicula akamushi and other species of mites.

This disease has a wide geographical distribution, especially in the Asiatic-Pacific area.

Transmission of this Rickettsia is interesting. Several small animals, field mice, rats, bandicoots, and other wild rodents serve as reservoirs. The mite sucks blood only during the larval stage. The infection acquired in the larval stage continues during the non-parasitic nymphal and adult stages and is passed on to the next generation through the egg to the larval stage. When this larval mite takes a blood meal the infective rickettsia are injected into the next vertebrate host, rodent or man. The larval mite being very small, about one-fourth of a millimeter, is easily overlooked and may remain attached to the host for several days.

Scrub typhus is endemic. Its presence depends upon the coexistence of a reservoir host and the transmitting vector. The disease occurs chiefly in those whose occupations or habits cause them to walk through tall grass which harbors the mite. Farmers, hunters, soldiers, surveyors, and other field workers are exposed. It occurs chiefly in men because of their occupational exposure.

The histopathology of scrub typhus characteristically is a disseminated vasculitis and perivasculitis of the small blood vessels of the skin, lung, heart, brain, and other organs. Capillary damage results in increased permeability causing edema and hemorrhage of many tissues. Frequently the spleen is enlarged. The site of the infective bite is marked usually by a necrotic ulcer known as an "eschar" or "primary lesion." Lymph nodes draining the eschar show marked enlargement and generalized lymphadenopathy is common.

According to Phillips the pathological lesions are extremely widespread involving practically all tissues, including skeletal muscle and loose connective tissue, spleen, lymph nodes, and myocardium. "The outstanding microscopic finding was numerous mitotic figures in the plasma cells which were the most prominent inflammatory cell. Acute splenic tumor, lymphadenitis, tracheitis, bronchitis, bronchiolitis, interstitial pneumonia, myocarditis, meningitis, encephalitis, swelling of connective tissue cells and infiltration of practically all organs and soft tissues with plasma cells, macrophages and lymphocytes." The blood picture is not characteristic but lymphocytosis with granulopenia is frequent. The incubation period

is between 7 and 14 days. Prodromal symptoms are present sometimes but usually the onset is sudden with a chill and other symptoms following within 24 hours. Prostration is great in severe cases and is accompanied by an intense toxemia.

Symptoms in order of frequency, according to Browning, are: headache, orbital pain, malaise, chill, backache, constipation, diarrhea, abdominal pain, photophobia, cough, nausea, and vomiting. These are accompanied by a remittent high temperature for about 14 days and a low blood pressure. Usually the eschar is situated on the ankle or leg but it may be found in the axilla, on the abdomen, scrotum, back, or buttocks. A macular rash appears on the fifth to eighth day which is raspberry red. Weight loss is marked from eight to fifty pounds.

The physiological disturbances consist chiefly of an acidosis, azotemia, proteinuria, depressed respiration and changes in the cardiovascular system.

Complications are frequent and consist of disturbed hearing, pneumonia and other pulmonary involvement, abdominal distention, pains in the joints and bleeding chiefly from the nose.

Convalescence is slow usually extending over a peirod of two months or more.

The diagnosis is suggested by such clinical features as: the primary lesion, regional and general lymphadenitis, headache, etc. Confirmation of the diagnosis is obtained by the serological test. The Weil-Felix reaction gives a positive agglutination with Proteus O X K. This test becomes positive on about the tenth day. A titer of 1:160 or even lower is considered significant if the titer rises during the next five days and then falls. According to Irons about 9 per cent of the cases in the armed forces did not have a positive Weil-Felix reaction.

The virulence of scrub typhus varied from very mild to very severe, in fact the mortality statistics are reported from 0.5 per cent to 60 per cent or even higher. According to Phillips, strains isolated from outbreaks of low mortality were less virulent to laboratory animals than those from outbreaks with higher mortality rates. He reports an outbreak of 1255 cases with a mortality of 0.6 per cent and another of 449 with a mortality rate of 7.1 per cent.

Variations in the severity of this rickettsial infection seems to depend upon the virulence of the organism, the resistance of the patient, the age (more severe in those over 40 years), living conditions, presence or absence of intercurrent infection, and complications.

Treatment: There is no specific treatment and there is no prophylactic vaccination for this disease. Symptomatic measures are similar to those used for epidemic typhus.

Prevention is most important measure. This can be accomplished by:

1. Avoid areas known to be infected.
2. Do not sleep on the ground.
3. Bathe thoroughly at least once daily.
4. Prepare suspicious camp sites by cutting all vegetation and burning over the area and spraying with petroleum emulsion.
5. Use arthropod repellents such as preparations of D.D.T. and dusting powder of sublimed sulphur and talcum powder.
6. Wear specially prepared impregnated clothing and high boots.
7. Rat poison and other measures of rodent control.

The importance of this disease can be judged by statements from the following authorities:

Sapero: "Epidemic diseases of most significance which plagued troops were roughly in order of importance: malaria, dysenteries, dengue, Bancroft's filariasis, scrub typhus and infectious hepatitis."

Ahlm: "The importance of this disease can be realized when one examines the facts. Malaria lends itself to treatment readily and has an exceedingly low mortality rate with only about 14 man days lost. Tsutsugamushi fever, on the other hand, lends itself to treatment very poorly and has a fairly high mortality rate with at least 100 man days lost."

McCoy gives the following figures for hospital admissions for the typhus group during World War II: scrub typhus 6,803 (estimated); Endemic typhus in U. S. 402; Epidemic typhus 61 (estimated). Typhus fever total 7,269 cases.

There are other rickettsial diseases of lesser importance. The most outstanding of these are Q fever and trench fever.

Q fever is caused by Rickettsia burneti and is transmitted by ticks through their feces. It is found in Australia and the United States. Q fever is immunologically distinct, there is no rash, and the Weil-Felix reaction is negative. The mortality is exceedingly low and the pathology unknown.

Trench fever is a specific relapsing infection which is transmitted by the body louse. It is

probably rickettsial in origin. This disease was frequent in World War I and reappeared in World War II. The mortality is zero and pathology unknown. Because of its many recurrences and prolonged convalescence, it had a high nuisance value in the armed forces.

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MEDICAL WOMEN IN WEST CHINA

GLADYS STORY CUNNINGHAM, B.A., M.D., M.R.C.O.G., F.I.C.S.

Dr. Gladys Story Cunningham and her husband, Dr. Edison B. Cunningham, have been medical missionaries in China since 1923. They are both professors in the West China Union University School of Medicine and Hospitals at Chengtu, Szechuan, a city of half a million people located 250 miles northwest of Chungking. Born in Canada, Dr. Cunningham took her B.A. degree from McGill University, Montreal, and her M.D. from the University of Manitoba. She served for a time on the staff of the Peking Union Medical College. At a later date she did post-graduate work at Johns Hopkins Medical School and at the Post Graduate School of Medicine, London, England, where she was admitted to membership in the Royal College of Obstetricians and Gynecologists. She is also a Fellow of the International College of Surgeons.

For almost nine years the A.W.H. has supported medical personnel in China. In January, 1942, this assistance was transferred from the coast to the interior and carried on through the West China Union University Medical School and Hospitals. According to the last report there were 12 Chinese women doctors and 14 nurses on the A.W.H. payroll.—ESTHER P. LOVEJOY, M.D.

WOMAN'S PAIN all over the world has always called out the spontaneous sympathy and help of other women. So it is not strange that personnel made possible by the American Women's Hospitals Committee are carrying on medical work in the far away city of Chengtu, Szechuan, China.

This city is about 250 miles north-west of Chungking, the erstwhile refugee capital of China. Before Jesus walked up and down Galilee healing the sick, Chengtu was an ancient walled city, in the midst of a fertile irrigated plain. Chengtu has for a long time been a centre of culture and education; the home of the Viceroy representing the Emperor of China in the old days and the scene of much intrigue and even fighting. Beautiful homes, with gorgeous gardens shut themselves off behind high walls, from misery and poverty outside.

But inside as well as outside the high walls, sickness, suffering and death made their way. No gateman was found who could keep them out.

In 1895 women from the Occident, with love of their fellowmen in their hearts, went to Chengtu to share with the Chinese some of the good things of the western world. Prejudice against them was very strong. The medical women in particular found themselves pitted against vested interests of a group whose livehood was endangered if scientific medicine were accepted. There was also the natural resentment and distrust of a conservative and proud people for something new, when they had always known that the best resided with themselves in the "Middle Kingdom."

But perserverance won out and in spite of anti-foreign troubles and internal political upheavals, the Eternal Spirit of Love carried on and in 1896 a hospital for women and children was opened by the Women's Missionary Society of the Methodist Church of Canada in Chengtu. It was housed in the Street of Happy Virtue in a building of Chinese structure. Equipment was scarce and trained help insufficient. But the will-to-do

and the love for suffering humanity, combined with skill, accomplished great things.

New methods of midwifery, put into practice by trained women, won many friends. In common with various other peoples Chinese considered birth and all pertaining thereto as unclean and left midwifery in ignorant and filthy hands. The toll of suffering was much more horrible than even death itself, e.g., a prolonged labor and 48 hours of puerperium during which a woman must sit up and not sleep; nauseous remedies; clumsy and butcher-like tactics. These left behind a trail of pain, invalidism and death, which is shocking to consider. What appeared as miracles of surgery and medicine, the huge tumor removed, the slashed knife-wound sutured, the broken bones healed, the baby dying of dysentery saved, etc., gradually created a demand for the services of these foreign devils who found no man or woman too poor, or too filthy, or too wicked, or too rich, or too powerful to touch and help.

Foreign personnel was of course quite inadequate, so a nurses' training school was established in 1902. Again it was a question not only of doing the work and the teaching but of finding women who were willing to become nurses, who were willing to engage in what Chinese society of that time considered a degrading and humiliating task. The fact that Occidental women of education and position did this work helped. But probably the most important factor was the spirit of love which animated them and gave them strength to oppose customs and to serve. One of these first nurses, Wu Yueh-Bin, now a stout and staunch woman of well over 60, is still connected with the hospital work, where her business acumen and organizing ability make her a great asset in handling coolies and helping in the housekeeping side of the work.

The years crept on and the time came when with joy a new women's hospital was opened. Here were large airy wards, three floors plus a basement, a delivery room, an adequate little operating suite, a lawn for convalescents, and a nurses' home for the increasingly large number of nurses. The tide was turning. Even families of good standing were beginning to encourage their daughters to take up nursing. In this conservative part of China women nurse only women and in the men's hopsitals male nurses and dressers were trained. A girl must now have at least her public school education before she could be admitted as a pupil nurse. In many other parts of China nursing schools were in operation.

Dr. Gladys Story Cunningham

Feeling the need of uniformity for the sake of mutual support and standards during these years, a Graduate Nurses' Association of China was established. There is now a "Registered Nurse" examination which graduates must write and High School education is an entrance requirement. Let it be noted that these things were brought to pass by men and women sent abroad by Missionary Societies—by men and women who worked in the name of Love. Since 1933 no male nurses have been trained in Chengtu. Women nurse men, women and children.

During these years general hospitals were built by Canadian and American Missions and a department of Pharmacy for training begun. Later a midwifery school for women was established by a very capable American woman, while later still a course in Laboratory Technology was opened.

In 1940 this fine women's hospital was burned to the ground one night—probably a case of incendiarism. Five patients were in labor, which may have been as well because it meant a fair number of the staff were up and about. No one was injured but one nurse and one coolie. The material loss was enormous as by that time import of supplies was almost impossible and very costly. The Women's Hospital carried on for two years in a vacant school and was then able

to move into the University Hospital which had been under construction.

Not only was there a need of more nurses than could possibly be sent to China from abroad, but there was an increasing demand for scientific medicine. Moreover, every craftsman, artist or professional man longs to reproduce and perpetuate his skill in pupils. The West China Union University in Chengtu was opened about 1912, and a Faculty of Medicine and Dentistry established soon after. This University is supported by the United Church of Canada, the Methodist Church of the U.S.A., the Northern Baptist Church, the Friends, and the Church Missionary Society of England. There was no University Hospital as such, but the Canadian Hospitals for men and for women and children, together with the American Methodist Hospital, were used as training centers for the clinical work.

As the years have gone by, an increasingly large and better-trained stream of Chinese men and women doctors and dentists have graduated from this medical-dental college. Its charter gives the graduates standing as affiliates of the State of New York. These Chinese doctors and dentists are now taking their places beside those graduates of other medical colleges in China, on hospital and university staffs, in public health and other government positions, and in private practice. But many thousands must be graduated before the American standard of one doctor to 1,500 population is attained.

Doctors, dentists, nurses, and pharmacists are all registered with the government and training institutions as well are all under the Department of Education.

The first woman to graduate from the Medical-Dental College of the West China Union University was Dr. Helen Yoh in 1930. Dr. Yoh is the daughter of a prosperous farmer, whose lands were far up in the foothills toward the Tibetan border. An American school teacher persuaded him to send her away to school and college. After graduation she worked in her Alma Mater Hospital, then had post-graduate work in the Peking Union Medical College. Another period of work in Chengtu was followed by post-graduate study in Canada and the United States. She is now one of the American Women's Hospitals personnel, a capable obstetrician and gynecologist. Not only is she doing excellent clinical work but she helps with teaching.

A Chinese Woman Doctor and Nurses on Duty at the West China Union University Hospital, Chengtu, Szechuan.

With the passing of time, scientific medicine in all its phases—internal medicine, surgery, obstetrics, research, nursing, pharmacy, public health, dentistry—has made for itself an undisputed place in China. They are now all respected professions. The greatest medical problem faced by China to-

day is to find teachers for the training centers which the government would like to establish.

In 1937 China was attacked by Japan and the war which had been threatening for years burst over her. Before many months, educational institutions from north and east China, singled out by Japan for destruction, were obliged to move towards the west. So the West China Union University found itself in the spring of 1938 becoming host to various other institutions as well as to numerous isolated students from other parts of China, Malay, Macoa, Hongkong, etc. Several medical schools worked in varying degrees of collaboration with the West China Union University.

War brought to the hospitals of Chengtu and to the people and the University great and hard burdens, though the invading armies never entered on foot. One of the heaviest burdens and one which has grown and persists to this day is inflation. The cost of living so far outran all possible sources of hospital and university income, that the work was being sadly crippled. This occurred at a time when work was enormously and rapidly increased by the influx of refugees who were accustomed to scientific medical care, by cholera epidemics, by illnesses and accidents due to great population movements, to overcrowding, to poverty and malnutrition, and to bombing raids.

When early in 1942 the first money from the American Women's Hospital's Committee to employ additional doctors and nurses came, it was as if a great friendly presence had come amongst us; as if a friendly shoulder had suddenly taken part of the load. Since then an increasingly large number of people have been able to serve China in our area because women in America have sent their gifts through the American Women's Hospitals Committee for this purpose. The nurses and doctors who are on the A.W.H. payroll differ from time to time, as they resign, are taken for government service, come from other countries, etc. The numbers vary as the cost of living fluctuates.

Actual air raids and air raid alarms were very trying to workers in hospitals to say the least. It so happened that none of the hospitals in Chengtu had a direct hit though bombs fell very close at times. Casualties poured into hospitals after an air raid and staff members felt very keenly the lack of beds, equipment, blood for transfusions, etc. At times even ordinary drugs, dressings, gloves, and the like were most difficult to get and exceedingly expensive. Everything had to be brought in by plane over the "Hump" from India. Much was smuggled goods and bought at the outrageous prices prevailing.

When an air raid alarm came, all patients had to be moved to the ground floor of the hospital. In many cases friends came and carried patients on stretchers to the country. There were no air raid shelters as the land about Chengtu is devoid of rock and even slit trenches were not much use, as they were likely to be full of water, for the bombing weather coincided with the summer rains. During air raid alarms and raids which might last for hours, no fires could be used and this made feeding patients a problem. Lights could not be shown of course and labor cases and the like were trying for both patient and attendants. Much sleep was lost, especially on moonlight nights, and yet the work had to go on in the daytime as well. This may give some idea of the circumstances under which A.W.H. personnel had to work.

The inflation is a very horrible experience and people in China continue to suffer through it. From week to week these doctors and nurses do not know what the cost of living may be. The fixed salary people must have bonuses, which fluctuate, but usually are on the rise. One's mind becomes grubby with a pre-occupation with food. Before inflation, rice, the staple food in Chengtu, sold for about $1.10 Chinese National Currency per bushel. During the past months it has risen to over $6,000 N.C. for the same amount. When it was at $1.10 N.C. that represented about 30 cents American money. Now at $6,000 N.C. it represents $3.00 in American money. During the past three years before the conclusion of war, when exchange was such that $1.00 American money brought only $50 to $60 N.C. and rice was selling for $1,200 to $2,000 N.C. per bushel, one can see how very difficult the whole situation was and appreciate the fact that if the A.W.H. had not provided personnel for medical work in Chengtu, a great deal of work would have gone undone in that key area.

Doctors and nurses on the A.W.H. payroll work in the hospitals associated with the West China Union University. In midwifery this work is largely done in the University Hospital itself. This is a comparatively new building, but lacks central heat, refrigeration, plumbing, or running water, as finances have not been enough for these. Also, the war closed Szechuan in before the materials arrived. Electricity in limited quantity there is, but as the city load is too heavy for the plant, one quarter of the city is in darkness

each night. Battery service supplies the labor room and emergency O.R. Again, because of transportation difficulties, most of the beds are wooden, which increases the insect-hazard. Operating rooms are heated by stoves! General surgery and internal medicine and pediatrics are also carried on in this building. The volume of charity work is very great and made possible by grants from relief funds from various sources, without and within China. An Eye, Ear, Nose and Throat Hospital, Dental Clinic, a leprosarium, and a T.B. Sanatorium are under the same business head as the General Hospital. Diagnostic x-ray and a limited amount of radium are in use. A deep x-ray therapy machine is enroute. Pathological and bacteriological laboratory services are fair. A blood-bank was not achieved due to lack of funds, equipment, etc. Much propaganda would be necessary to acquire the donors.

The funds which the A.W.H. sends to Chengtu are used well and frugally in supporting doctors and nurses who not only care for the sick, but teach in the West China Union University Medical School and the hospitals of the district. It all goes directly to this use, none being consumed in overhead, as all administration is carried by the University office.

However the international good-will implications must not be disregarded. That a body of professional women in America takes this tangible, direct, and practical way of helping China is not lost on those who are on the payroll, nor on those who know from where this help comes. The Szechuanese are isolated and find it most difficult to express themselves to foreigners, but their gratitude and appreciation is no less profound. And as for those who have the privilege of administering these funds, they are glad to be associated with the American Medical Women's Association in its good work.

Across the Editors' Desks . . .

Dear Dr. L'Esperance:

I would like to tell you about the cross-country I took last May and June. Having completed a two-year residency in chest and thyroid surgery at Kings County Hospital, I thought it advisable to see the technics carried out in other hospitals and clinics throughout the country.

The most amazing experience was the cordiality I met everywhere I went. There were many other visiting doctors, the majority of them South Americans and Canadians, and always, of course, a few American doctors, but these in general were older men. At various hospitals, the staff members not only went out of their way to be gracious to me as to other visitors but they actually took pains to make things even more pleasant and convenient for me than for others. For example, at the University of Chicago and the Mayo Clinic where the visiting doctors sit in amphitheatres or on specially raised platforms to view operations, I was invited right down to the operating table where I could see what was going on. As a matter of fact, I was so embarrassed many times that I missed some of the important points in the operative procedure.

I attended the meetings of the Thoracic Surgical Association in Detroit and the American Association for the Study of Goiter in Chicago. Although I am not a member of either organization, I was given guest privileges and made to feel decidedly welcome.

At the University of Michigan in Ann Arbor, a professor of surgery from Iowa University, a young doctor sent by the Danish Government, and myself were taken on a special tour to the tuberculosis sanitarium. At the University of Chicago, at the Mayo Clinic, at Barnes Hospital in St. Louis, and at the many other hospitals that I visited, not only did important men show me around personally, but in many cases, they were kind enough to take me to special conferences and on special rounds.

I think they were rather intrigued by the idea of a woman surgeon: when I asked, however, if they planned to train women surgeons in their own hospitals, they always hedged and stated that the veterans now need first preference.

I needn't tell you that the lunches, dinners, and conferences made my vacation pleasant as well as instructive. It was stimulating and a great privilege to experience these human relationships and to have the opportunity to learn so much about surgical methods of our great hospitals and doctors.

Sincerely,
HELEN I. HEIMAN, M.D.

The end of the war has marked the advent of a number of new journals of national importance, particularly to those readers with special interests. Some of the leading writers of our present contemporary specialty literature have joined hands to create some new periodicals of potent import. One of the chief advantages of these combinations has been the flavor of international participation not only in editorship but also in subject material reviews. . . . The last new journal of note is the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION, whose editorial board includes the majority of the outstanding women physicians of the world. Its original journal number has several articles of scientific interest but is devoted in large part to the discussion of representation and fulfillment of women in medicine.

It is our editorial wish to welcome these new ventures whose foundations rest upon such well established scientific and editorial merit. Good editing!—Editorial in *Western Journal of Surgery, Obstetrics and Gynecology*, June 1946.

* * *

I have received the April and May issues of your new JOURNAL and have found them so enjoyable and creditable that I should like to subscribe. I am a senior medical student here at Indiana University. It will be nice to have a complete set of the JOURNAL and have them bound each year—a worthy record.

DOROTHY T. PIHOS
Indianapolis, Indiana

* * *

Please accept my one year subscription for the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION.

The copies of the JOURNAL which I have received were of particular value to me in several ways. . . . As my main interest during my nursing years prior to my present studies was in maternal and infant mortality and welfare, I was especially interested in DR. LEONA BAUMGARTNER'S article, "What Lies Ahead for Mothers and Children in the United States?"

Being a sophomore medical student, I was glad to see a student section in the May issue and do hope that it will be continued.

VIRGINIA SCHERBEL
Salt Lake City, Utah

* * *

I have to congratulate you and all your colleagues for your splendid realization and the nice presentation of the JOURNAL.

MARIA PAUMGARTTEN DEANE, M.D.
Belem, Para, Brazil

* * *

DEAR DR. L'ESPERANCE:

This is to acknowledge the receipt of a copy of the first issue of your publication, JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION, for which we thank you very much. We hope that a copy of each of the subsequent numbers will be sent to our Library as they are issued.

We wish to state that our Scientific Library is the science branch of our National Library and is the repository of all scientific and technical literature published or acquired by our Government. It is opened to all research workers and to the public. It is unfortunate that our pre-war collections were burned by the enemy during the war. At present we are just beginning to build another scientific collection in which we are much interested to have the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION. Please send us also complimentary copies of medical, pharmaceutical, botanical and other technical books for the rehabilitation of our library.

Very sincerely yours,
QUINTIN A. EALA
Acting Chief, Scientific Library
Commonwealth of the Philippines
Department of Agriculture and Commerce
BUREAU OF SCIENCE
Manila

The *Journal of the Iowa State Medical Society* was pleased to receive the initial issue of the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION. Although a bulletin of this Association has been published since July 1922, it did not take the form of the present monthly journal.

This new journal is indeed a credit to the medical women of America. Its intended purpose is to be a fitting tribute to all medical women and to be worthy of their past accomplishments. In addition to being a representative organ for reporting the best type of work by women in medicine, the publication will offer an opporunity for all members of the medical profession to submit scientific articles.

The *Journal* offers its congratulations to the women of the profession in this forward move on their part and extends best wishes in their new venture.—Editorial in *Journal of Iowa State Medical Society*, June 1946.

BOOK REVIEWS

ADA CHREE REID, M.D.

WOMEN IN INDUSTRY—Their Health and Efficiency. Issued under the auspices of the Division of Medical Sciences and the Division of Engineering and Industrial Research of the National Research Council. Prepared in the Army Industrial Hygiene Laboratory by Anna M. Baetjer, Sc.D., Assistant Professor of Physiological Hygiene, School of Hygiene and Public Health, The Johns Hopkins Hospital. Philadelphia and London: W. B. Saunders Company, 1946. Price $4.00.

As the summary states in part, this is a review "to present the scientific facts which are known concerning the health and efficiency of women in relation to their employment."

The six sections discuss (1) The Ability of Women to Work; The Types and Conditions of Work for Women, (2) Sick-Absenteeism Among Women Employees, (3) Accidental Injuries to Working Women, (4) Occupational Diseases Among Women Employees, (5) Gynecological and Obstetrical Problems Associated With the Employment of Women, (6) The Mortality and Fertility of Women in Relation to Occupation.

Of particular interest to physicians, especially those engaged in industrial work, are those chapters which deal with the prevention of sick-absenteeism, and the gynecological and obstetrical problems of women in industry. The author recommends the participation by the medical department in placements so this may be done in relation to the applicants' physical and mental capacities (the doctor should, of course, have a good knowledge of the plant and type of work to be performed). Careful sickness records should be kept to determine the factors which may influence absenteeism in the individual or in groups, and examinations made of those chronically absent to determine the cause. The employees should be provided with health services and encouraged to use them.

Gynecological problems arise when a woman has a condition limiting her type of work and some plants advise routine pre-employment pelvic examinations. Special precautions must be taken with pregnant women to avoid their doing heavy physical work or being exposed to toxic substances such as carbon monoxide, benzol, or lead. Women should be encouraged to report pregnancies promptly in order that they may be safeguarded.

Dr. Baetjer mentions the need for co-operation between the Personnel and Medical departments in solving the problems of placement and excess absenteeism, and this reader feels that this cannot be overemphasized. So many factors—emotional, personal, economic—operate to affect a working woman's job performance that a proper evaluation is impossible on physical grounds alone. There is no question but that she is a more unstable quality than her male colleague, and that this constitutes a major problem of dealing with women in industry.

This book is a very complete review of the subject and should be most useful to all those interested in industrial relations as well as the physicians and personnel managers directly concerned.—*Adelaide Romaine, M.D.*

* * *

A TEXTBOOK OF GYNECOLOGY. By Arthur Hale Curtis, M.D., Professor and Chairman of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of Gynecological Service, Passavant Memorial Hospital, Chicago. Fifth Edition. 755 pages with 455 illustrations. Chiefly by Tom Jones, including 36 in color. Philadelphia and London. W. B. Saunders Company, 1946. Price $8.00.

The fifth edition of Dr. Arthur Hale Curtis' textbook of Gynecology has all the answers to modern up-to-date gynecology. The book is extremely well written and most readable, besides possessing four hundred and fifty-five illustrations which include excellent anatomical diagrams, microphotographs and surgical procedures.

Each chapter of this book is concisely written and well planned. Chapter 10 which deals with Gonorrheal disease of the Female Genitalia has been managed from every angle including penicillin therapy.

Chapter 22, Other Tumors and Hypertrophy of the Uterus, has had added to it Sarcomatoid growth of the Endometrial stroma, well described and illustrated. It also has described Hypertrophy of the Uterus as a separate clinical and gynecological entity, etiology still debatable.

This textbook of gynecology can be recommended as a valuable addition to any medical library, and an excellent reference book for gynecologists.—*Isabel Knowlton, M.D.*

RENAL DISEASES. By E. T. Bell, M.D., Professor of Pathology in the University of Minnesota, Minneapolis, Minnesota. Octavo, 434 pages, illustrated with 115 engravings and 4 color plates. Cloth $7.00. Published 1946.

The twelve chapters of this book are of almost equal interest to the clinician and pathologist. It is in part a compilation of studies on renal diseases carried on by the author during the past twenty-five years. In every case the pathological findings are closely integrated with the clinical picture. There is an excellent list of references relating to each particular subject, in addition to case reports and a very careful analysis of all statistics available to the author. The brief first chapter includes the author's classification of renal disease. Chapters 2 and 3 are concerned with normal and pathological histology and physiology. Chapter 4 deals with developmental anomalies, including cystic disease of the kidneys. Chapters 5 through 8 are concerned with diseases and conditions directly affecting kidney tissue, starting with obstruction of the urinary tract from various causes resulting in hydronephrosis and including a full discussion of glomerulo nephritis, lipoid nephrosis, amyloid disease, tubular diseases, and pyelonephritis as well as the toxemias of pregnancy and the specific infections of the kidneys. Chapter 9, which deals with diseases of the blood vessels, includes a very interesting study of the clinical forms of hypertensive disease and a discussion of findings and theories relating to primary hypertension. Since the renal result of diabetes mellitus is concerned with intimal disease of the small arteries, it too is discussed at some length in this chapter. The three brief closing chapters are concerned with diseases of the kidneys related to metabolic disorders, extra-renal azotemia, and tumors. The correlation between clinical symptoms, pathological physiology and structural change in the kidney has been most ably presented.—*Mary E. C. MacGregor, M.D.*

* * *

PSYCHOLOGY FOR NURSES. By Bess V. Cunningham. Designed and written for student nurses. 336 pages. $3.00. Appleton-Century, New York, 1946.

The author does admirably the important job of making meaningful to a student nurse the helpful role that psychology can play in her career.

The book under review is written simply and understandably. Its definitions, illustrations, and examples are clear-cut and so integrated to everyday experience that the student is certain to find them interesting and easy to remember.

The most outstanding accomplishment of this book is its challenge to apply the insight and knowledge derived from psychology to all the student nurse's relationships. Each chapter lists a wide range of suggested activities for this broad application of psychology.

On those phases of psychology on which opinion is divided, the author objectively points out the controversy and allows the student to weigh the issues.

This is a nicely balanced up-to-the-minute textbook—not so complex that it leaves the student in a mental fog—but, rather, a stimulating book on student level.—*Anne F. Finn, R.N.*

THE $34,000 PRIZE CONTEST FOR PHYSICIANS' ART WORK on the subject of "Courage and Devotion Beyond the Call of Duty" will be judged at the Atlantic City Centennial Session of the A.M.A. at Atlantic City June 9-13, 1947. Art works on other subjects may also be submitted for the regular cups and medals. For full information write Dr. F. H. Redewill, Secretary, American Physicians Art Association, Flood Building, San Francisco, Calif., or to the sponsor, Mead Johnson & Company, Evansville 21, Ind., U.S.A.

Medical School News

Edited by EVA F. DODGE, M.D.

News items and announcements of interest to women medical students and interns will be welcomed by Dr. Dodge, University of Arkansas School of Medicine, Little Rock, Arkansas.

* * *

News of women medical students is very limited this month because of the de-celeration program in many medical schools and also because of summer vacations. The Editor hopes that reporters for the various schools will send in news promptly after the opening of the fall term.

The JOURNAL is being mailed to all women medical students at their home addresses. If students wish the JOURNAL to be sent to their school addresses, they should send immediate notice to the Business Office (Apt. 406 — 3300 West End Ave., Nashville 5, Tenn.) to insure fall issues reaching them promptly. Several reporters and students have written of their interest in the JOURNAL's articles, and women medical students who are not receiving the publication should notify the Business Office.

Reporters are requested to send this Editor the names of all freshmen women medical students, all other new women medical students, and the names of new women interns and residents at the hospitals connected with their medical schools—thereby insuring the receipt of the JOURNAL by all newcomers.

All senior women medical students are eligible for associate membership in the American Medical Women's Association. Associate members are not assessed dues and may attend meetings of the Association. Associate membership is extended through the first two years following graduation from medical school, then the members may make application for active membership. Application blanks for associate membership may be found on the opposite page or will be sent upon request to Dr. ZOE JOHNSTON, 601 Jenkins Bldg., Pittsburgh, Pa., or the Executive Secretary, Apt. 406—3300 West End Ave., Nashville 5, Tenn.

One student news reporter writes that her chief difficulty is in getting maiden names corrected to the married names as students return for the new sessions, since all class books listing student names are made out in advance. She asks how women students in other medical colleges manage this situation and your Editor will welcome any information along this line to pass on to other student reporters.

* * *

Creighton University

Doctors LEO and KATHLEEN SURGEON, graduates of 1945 class, have a daughter, Laurel Ann, born June 8, 1946, in Los Angeles, California.

DR. RITA D. PERLL, Kansas City, and DR. MARGARET STORKON, Gardena, California, have successfully completed their National Board Examinations. Your Editor had an opportunity to meet Dr. Storkon and her mother and enjoy their hospitality in Los Angeles enroute to the American Medical Association meeting. Dr. Storkon, in general practice with her father, finds her days very full. She hopes to take up a specialty in the near future.

DR. GERTRUDE PEORE, 1942, has recently completed a fellowship in pathology at the Mayo Clinic.

DR. AGNES JENNINGS, 1943, has just completed her residency in Pediatrics at the State University Hospital, Iowa City, Iowa.

PATRICIA PCALEN, fourth year student, was Medical Director at Camp Brewster for six weeks.

* * *

Iowa University

The medical school of the University of Iowa has fifteen women medical students, ten of them having just completed their freshman year. All women students belong to the Eta Chapter of the Nu Sigma Phi medical fraternity, which helps keep them in close contact through their social gatherings and meetings.

JANET BRINKER, M.D., 1945, is now Student Health Physician at the University of Iowa.

DOROTHY GILDEA, a freshman student, has announced her engagement to Paul Cunnick, a senior medical student.

* * *

Texas University

The women's fraternity of the medical school was represented at the National A.E.I. Convention in Minneapolis in May by JUANITA THACKER

HART. In keeping with the keynote of the convention, the women students gave an alumni banquet June 15, with eight women physicians from Houston, Beaumont, San Antonio, and Galveston in attendance. DR. CHAUNCEY D. LEAKS, Administrative Dean, was the main speaker and presented the latest developments in the housing situation for women medical students. The University is planning to build a dormitory to house the women medical students since their old dormitory was demolished by the 1942 storm.

Four women in the May, 1945, graduating class were A.O.A. members: PATTY MAE DODSON GILLIAM, ELIZABETH HOLLIDAY BRATTENG, ESTELLE ROGERS, and EUGENIA TATE GAUNT.

Recent marriages are: EVA J. TAYLOR to CHARLES EVERETT, and HELEN HEARE to JOHN MCKINLEY.

University of Utah

INGA F. FRENKEL, senior medical student at the University of Utah, was married on May 31, 1946, to S. KURT WEIL in New York City at the bride's home. Mrs. Weil was born in Berlin, Germany, and attended medical schools at the University of Beyne, Switzerland, and the University of Prague, Czechoslovakia, before coming to the University of Utah. The bride plans to study radiology following graduation. Mr. Weil, also from Germany, is a business man in New York.

GWEN GLEAUE, sophomore medical student at the University of Utah, who received her B.S. in June, was cited for a fine scholastic record, having maintained a straight "A" average for ten consecutive quarters. She was elected to Phi Beta Kappa and Phi Kappa Phi societies and received the Soroptomist Club's one hundred dollar scholarship award.

Wayne University

The medical school opened July 8, with two women in the freshman class, three sophomores, and one junior and four seniors.

AMERICAN MEDICAL WOMEN'S ASSOCIATION, INC.

APPLICATION FOR MEMBERSHIP

☐ Active. $3.00 ☐ Associate. No dues ☐ Life. $50. ($25 in two payments)
(Active, associate, and life members receive the official publication. Active and life members receive membership in Medical Women's International Association.)

Dr. .....
(Please print name as you wish it to appear in Year Book)

Address .....

.....

Medical School ..... Year of Graduation .....

Other Degrees .....

Licensed in County ..... State .....

Member County Society ☐ Yes ☐ No ..... Fellow A. M. A. ☐ Yes ☐ No .....

Specialty ..... Specialty Board ☐ Yes ☐ No .....

Place of birth—City ..... State ..... Single; Married; Widow .....

Date of Application ..... Signature .....

Endorsed by 1 ..... M.D., Member AMWA

2 ..... M.D., Member AMWA

NOTE: Make check payable to American Medical Women's Association, Inc.

Mail this blank and check to Treasurer, MARY RIGGS NOBLE, M.D., Bowmansdale, Pennsylvania

CASE REPORTS

SUSAN A. SLAKIS, M.D.

Kidney Stone in a Male Child of Three Years

This child was admitted to the feebleminded institution in August of 1943. He was rated as an inbecile with mongolism. He was a physically frail child with the characteristics of a mongol, amiable disposition, periodic digestive disturbance of malnutrition and abdominal distention from which he recovered after good care and nursing.

On June 10, 1944, he became restless, refused food, suffered emesis, and developed a temperature of 101 rectally. No pathological findings were revealed on examination, but the child was evidently in severe pain, the cause at the time of this examination unknown.

Then a day later he suddenly developed extreme distention of the scrotum, penis, and bladder. The swelling grew larger every few minutes until the scrotum ballooned and the rectum prolapsed. Under applied therapy, the child passed urine with great pain only in spurts, and then a stone, the size of a pea, appeared. It was very hard in texture and green in color.

All the symptoms and swelling gradually subsided. The child again returned to his former health with no recurrence since the passing of this kidney stone. Condition rather rare in small children.

* * *

Duodenal Ulcers of a Child Fifteen Months Old

This baby was born on July 2, 1943, at Mt. Sinai Hospital at full term. It was diagnosed as mongolian and recommended to this institution. It was brought to the Lincoln State School and Colony directly from the hospital when it was ten weeks of age.

This baby is extremely weak and small for its age. On admission it weighed 8 lbs. 9 oz., with evidence of malnutrition and mongolian characteristics such as high palate arch, slanting eyelids, far spaced big toes, and weak heart. It takes nourishment very poorly and has frequent regurgitations and consequently malnutrition developed.

In December it developed bronchopneumonia with a temperature reaching 105, but recovered in a course of a few weeks, after which it gained in strength but not in weight. This continued until March when again the child was very ill with enteritis and abdominal distentions and recurrent bronchitis.

The original weak heart began to show signs of impairment in signs of peripheral cyanosis, cold limbs, and attacks of syncope. These signs continued until its death on May 10, 1944, when it was one year and three months of age, of cardiac insufficiency and bronchopneumonia.

Post-mortem examination revealed cachexia from prolonged malnutrition. Abdomen filled with about 1000 c.c of thin feculent fluid and evidence of peritonitis exhibited by presence of small red spots and fibrin deposit and a perforation of the anterior wall of the duodenum just below the pylorus. On opening the duodenum were two small ulcers just below the pylorus, one at posterior wall and round with slightly elevated edges or margins with moist bottoms. The second ulcer at anterior wall is perforated also with elevated margin about 1 c.m. in diameter only somewhat smaller. Mucosa of stomach slightly swollen but without any other ulcerations. Esophagus has fusiform distention at lower portions. Liver was yellowish with friable wall; diffuse miliary spot of pale color. Necrotic areas. Same true of pancreas and adrenals. Kidney reveals cloudy swelling. Pericardial cavity contains a few cc. of clear fluid. No pathology of values. Right ventricle dialated some. Myocarditis flabby and pale red. Lungs reveal mottled pleura and modular. There were numerous infiltrated airless spots over all lobes, more over lower lobes. Bronchi reddened and swollen. Skullbones were still separated—large anterior fontanel and small posterior fontanel present. Brain small—weight, 550 gm.

Pathological diagnosis—Mongolism.

1. Round ulcers of the duodenum
2. Perforated ulcer with subsequent peritonitis
3. Bronchopneumonia
4. Fatty degeneration (with miliary necrosis) of liver
5. Myocardial degeneration.

Immediate cause of death—perforation of duodenal ulcer, round ulcer rather rare in child of such age; bronchopneumonia of rather long standing; appearance of child suggested mongolism but well developed brains were against this classification.

News and Announcements

Edited by ELIZABETH KITTREDGE, M.D.

Members are urged to send news items and announcements of interest to Dr. Kittredge, 3906 McKinley St., N.W., Washington 15, D. C.

* * *

Dr. Esther P. Lovejoy sailed on the *Queen Mary* on September 5, to attend the meeting of the Council of the Medical Women's International Association in London later in the month. Dr. Elizabeth Brakeley, now in Europe with UNRRA, obtained leave to attend the International Council meeting also. A report of the meeting will appear in the Journal.

* * *

Dr. Caroline Jackson of Washington, D. C. announces the removal of her office to 1901 Wyoming Avenue, N.W. Dr. Jackson's practice is limited to obstetrics.

* * *

Dr. Marguerite Mary Neylan, who is a member of the staffs of the Boston Floating Hospital, St. Elizabeth's Hospital, and the Boston Dispensary, was married recently to Dr. William J. Kelley of Dorchester, Massachusetts.

* * *

Dr. Easton McNab Gropper of Rockford, Illinois, was married on July 27 to Eugene F. Crawford, also of Rockford. Dr. Gropper was graduated from Baylor University School of Medicine, Waco, Texas, on 1942, and later served as resident physician at Charity Hospital, New Orleans, before establishing her office in Rockford.

* * *

Dr. Louise H. Branscomb has returned from overseas service and has resumed her practice in Birmingham, Alabama, specializing in obstetrics and gynecology. For more than a year Dr. Branscomb served in Greece and North Africa in the medical department of UNRRA, with the rank of Major.

* * *

Dr. Melsom Barfield Carter returned recently to Birmingham, Alabama, from military duty in California. She was in the Army Medical Service, holding the rank of Major, and was stationed at a receiving hospital for casualties from the Pacific area.

* * *

Dr. Nila Kirkpatrick Covalt is serving as Assistant Chief of Physical Medicine for the Veterans' Administration, and with her husband, Dr. Donald K. Covalt, is living in Washington, D. C. Dr. Covalt was graduated in medicine from Indiana University in 1933, and has specialized in physiotherapy. She is a member of the Indiana State Medical Association, the American Medical Association, the American Medical Women's Association, the American Physiotherapy Association, and the American Congress of Physical Therapy.

* * *

The Springfield (Ohio) *News-Sun* recently printed in its column of "Little Chats with your Neighbor," an interesting story of the work of Dr. Mary P. Hunter, pathologist at the City Hospital, Springfield. Asked as to the prospects of an increase in the number of medical women in the future, Dr. Hunter says, "Definitely, yes. Women physicians have proved themselves as poised in a given situation as men. Their judgment and astuteness in medical matters have become noteworthy."

* * *

Dr. Sophie Rabinoff, senior health officer of the Borough of the Bronx, New York, was in charge of arrangements for the taking of x-rays of visitors to the Bronx Zoological Gardens on August 10 and 11. A mobile unit of the Department of Health was set up in front of the Zoo auditorium. The survey is part of the Health Department's tuberculosis program, under the direction of Commissioner of Health Israel Weinstein. X-rays showing signs of disease will be sent to the family physician if the person examined so directs. Dr. Weinstein emphasized the fact that all reports are held in strict confidence and that no charge is made. The survey is made possible by the use of a new apparatus which does not require the removal of clothing.

The Department of Health, New York, is now using fourteen of these machines.

* * *

Dr. Mary Leah Cook of Waynesville, Ohio, where she has practiced medicine for thirty-eight years, following her graduation from the University of Illinois College of Physicians and Surgeons, was recently the subject of a human interest story in the Columbus (Ohio) *Dispatch*. Dr. Cook has twice served as president of the Warren County Medical Society and for nineteen years has been its treasurer. When the Waynesville Public Library was opened thirty years ago she was elected its first president and has held the office ever since. Not long ago the Waynesville Civic Club paid its tribute to her by holding a "Dr. Mary Cook Night," at which time the reservations asked for far exceeded the seating capacity.

* * *

Dr. Helen F. Schrack of Camden, N. J., received the second prize for her oil painting, "Pennsylvania Farm Country" in the class B competition (three to eight years' experience) at the American Physicians Art Association art exhibit during the A. M. A. meeting in San Francisco July 1-5. With the award goes the A. P. A. A. cup. The exhibition is under the sponsorship of Mead Johnson and Company.

* * *

Dr. Margaret Nicholson of Washington, D. C., has been named Chairman of Arrangements for Women Physicians attending the fortieth annual meeting of the Southern Medical Association in Miami, Florida, November 4-7, 1947. Plans are being made for a post-convention trip to Cuba following the meeting.

* * *

Branch Twenty-six, Minnesota

The regular annual meeting of Branch Twenty-six was held on May 20, 1946, during the meetings of the Minnesota State Medical Association at St. Paul. Dr. Nellie O. Barsness gave a short report on the mid-winter meeting of the American Medical Women's Association in New Orleans last December, which she attended. She told of her trip by air to New Orleans, of the delightful hospitality the delegates enjoyed, and of the interesting reports of constructive work which were made.

The members of Branch Twenty-six regretted their inability to have representation at the San Francisco meeting.

* * *

OBITUARIES

Florence Edgar Voorhees, M.D.

Dr. Florence Edgar Voorhees of Newark, New Jersey, died on July 20, at her home, after an illness of three months. A native of Woodbridge, New Jersey, Dr. Voorhees was the daughter of the late Mr. and Mrs. Daniel Selover Voorhees, whose ancestors came to this country from Holland and settled on Long Island, New York, in 1660. Dr. Voorhees attended Mount Holyoke College and was graduated from the New York Medical College and Hospital for Women in 1901. After interning at the hospital of the New York Medical College, she served as resident physician at Ann May Memorial Hospital, Spring Lake, New Jersey. For several years she practiced in Spring Lake, New Jersey, and then went to Germany for special study in Gynecology and obstetrics. Thirty-five years ago Dr. Voorhees opened an office in Newark with Dr. Mary Bradnax Rye. She was a member of the American Medical Association, the American Medical Women's Association, the New Jersey Medical Society, Academy of Medicine, Newark, Essex County Pathological Society, and New Jersey Women's Medical Association. She was on the visiting staff of the Presbyterian Hospital, Newark, the associate staff of the East Orange General Hospital, and the courtesy staff of St. Barnabas Hospital, Newark.

Dr. Voorhees was also a member of the Jube Memorial Congregational Church, Newark, and the Van Voorhees Association. With her death the medical profession and her many friends and associates have suffered a great loss.

Isabel Gray Weston, M.D.

Dr. Isabel Gray Westson, one of the first women to graduate from Boston University Medical School, died at her home in Wellesley, Massachusetts, on July 18, aged 92 years. The daughter of a sea captain, Dr. Weston is said to have sailed around the world with her father during her girlhood, before beginning the study of medicine. After her graduation, in 1887, she interned at the Massachusetts Homeopathic Hospital and then opened an office in Natick. Later she removed to Wellesley where she engaged in general practice until her retirement twenty years ago.

The woman threatened with menopausal storms may well approach her autumn days with poise and serenity, under Hexital therapy. • Combining the orally active estrogen *hexestrol* ("definitely less toxic than diethylstilbestrol"*) with the central sedative *phenobarbital*—HEXITAL is prolonged in action, yet well within the economic reach of most patients. • Hexital brings emotional and physiologic calm either to the surgically castrate or to the naturally climacteric patient, with a maximum of effectiveness and a minimum of side-reactions. • **FORMULA:** Each tablet contains 3 mg hexestrol and 20 mg phenobarbital. Also available as Hexestrol-Ortho without phenobarbital.

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*Greenhill, J. P., Am. J. Obst. & Gyn. 44:475, Sept. 1942.

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Old Way...

CURING RICKETS in the CLEFT of an ASH TREE

FOR many centuries,—and apparently down to the present time, even in this country—ricketic children have been passed through a cleft ash tree to cure them of their rickets, and thenceforth a sympathetic relationship was supposed to exist between them and the tree.

Frazer* states that the ordinary mode of effecting the cure is to split a young ash sapling longitudinally for a few feet and pass the child, naked, either three times or three times three through the fissure at sunrise. In the West of England, it is said the passage must be "against the sun." As soon as the ceremony is performed, the tree is bound tightly up and the fissure plastered over with mud or clay. The belief is that just as the cleft in the tree will be healed, so the child's body will be healed, but that if the rift in the tree remains open, the deformity in the child will remain, too, and if the tree were to die, the death of the child would surely follow..

*Frazer, J. G.: The Golden Bough, vol. 1, New York, Macmillan & Co., 1925

It is ironical that the practice of attempting to cure rickets by holding the child in the cleft of an ash tree was associated with the rising of the sun, the light of which we now know is in itself one of Nature's specifics.

New Way...

Preventing and Curing Rickets *with* OLEUM PERCOMORPHUM

NOWADAYS, the physician has at his command, Mead's Oleum Percomorphum, a Council-Accepted vitamin D product which actually prevents and cures rickets, when given in proper dosage.

Like other specifics for other diseases, larger dosage may be required for extreme cases. It is safe to say that when used in the indicated dosage, Mead's Oleum Percomorphum is a specific in almost all cases of rickets, regardless of degree and duration. Mead's Oleum Percomorphum because of its high vitamins A and D content is also useful in deficiency conditions such as tetany, osteomalacia and xerophthalmia.

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COUNCIL-ACCEPTED

Oleum Percomorphum With Other Fish-Liver Oils and Viosterol. Contains 60,000 vitamin A units and 8,500 vitamin D units per gram and is supplied in 10 c.c. and 50 c.c. bottles; and in bottles containing 50 and 250 capsules.

MEAD JOHNSON & COMPANY, Evansville, Indiana, U. S. A.

Please enclose professional card when requesting samples of Mead Johnson products to co-operate in preventing their reaching unauthorized persons